



Walton Park Conceptual Master Plan

Prepared for the Town of Mineral
March 2008

Prepared by:



cdac

The Community Design Assistance Center (CDAC) is an outreach center of the College of Architecture and Urban Studies and Virginia Tech that assists communities, neighborhood groups and non-profit organizations in improving the natural and built environments through design, planning, and research. Through the integration of the learning and working environment, the Center will execute projects that link instruction and research and share its knowledge base with the general public.

Community Design Assistance Center

101 South Main Street | Blacksburg, Virginia 24061

p: 540.231.5644 | f: 540.231.6089 | <http://cdac.arch.vt.edu> |

Project Design Team

The CDAC design team for this project was comprised of the following members:

| | |
|----------------|--|
| Kim Steika | Landscape Architecture Project Coordinator, Community Design Assistance Center |
| Michael Blake | Undergraduate student, Landscape Architecture |
| Dan Dart | Undergraduate student, Landscape Architecture |
| Brian Jank | Undergraduate student, Landscape Architecture |
| Brian Wolyniak | PhD student, Urban Forestry |

Acknowledgements

The CDAC design team would like to recognize and thank the following individuals for their assistance throughout the course of this project:

| | |
|------------------|---|
| Jimmy Dodd | Coordinator, Mineral Bluegrass Festival |
| Ti-Lea Downing | Clerk of Court, Town of Mineral |
| Matt Gart | CDAC Design Review Panel Member; Landscape Architect, Virginia Tech |
| Willie Harper | Town Manger, Town of Mineral |
| Jennifer Otey | Geo-spatial Project Developer, Forestry, Virginia Tech |
| Kimberly Rennick | CDAC Design Review Panel Member; Landscape Architect, Anderson and Associates |
| David Stone | Forester for Louisa County, Virginia Department of Forestry |
| Eric Wiseman | Urban Forestry Professor, Virginia Tech |

Table of Contents

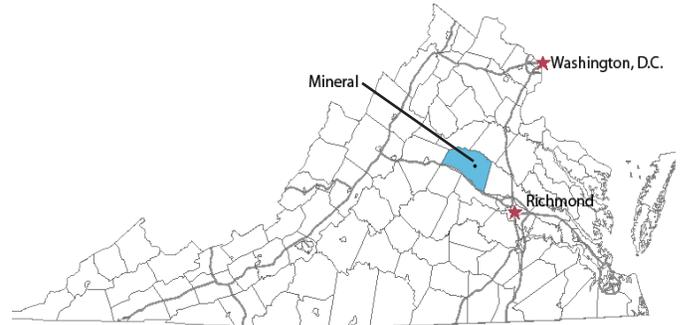
| | |
|--|----|
| Project Description..... | 01 |
| Design Process..... | 02 |
| Site Inventory | 03 |
| Site Analysis..... | 07 |
| Initial Conceptual Diagrams..... | 20 |
| Preliminary Conceptual Designs..... | 24 |
| Final Conceptual Design..... | 28 |
| Phasing Recommendations..... | 31 |
| Conclusion..... | 32 |
| Appendix A: Rain Gardens/Bio-retention Swales..... | 34 |
| Appendix B: Porous/Pervious Paving..... | 45 |
| Appendix C: Planting Recommendations..... | 49 |
| Appendix D: Site Amenities..... | 54 |
| Appendix E: Tree Inventory Species List..... | 54 |
| Appendix F: List of Proposed Elements..... | 62 |
| Appendix G: Festival Survey and Findings..... | 67 |

Project Description

Walton Park is a wooded park area of about 13.5 acres with water and sewer hookup for campers. Some lighting exists on the site, though it is not well planned. Also existing on site are a covered stage, water pump building, old stables that are used as storage, and an old concession building. The stage is presently used annually to host a three day Bluegrass Music Festival that draws 3,000-4,000 people from throughout the eastern United States.

The Town of Mineral would like to expand upon the current site elements and park uses to create a park that the community can use on a daily or weekly basis, and that can also be used for annual meetings, company picnics, family reunions and for industries that would like a venue for outdoor events.

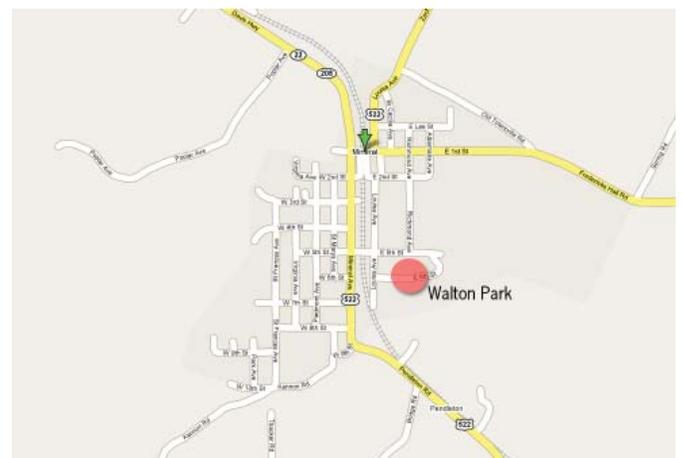
CDAC was asked to assist the Town in the development of a conceptual master plan for Walton Park that integrates existing uses while responding to needs and desires of other potential user groups and community members.



State context map



County context map: The map shows the Town of Mineral in relation to county points of interest such as Lake Anna. (Image source: maps.live.com)



Town of Mineral Context Map (Image source: maps.live.com)



Aerial photo of Walton Park. (Image source: maps.live.com)

Design Process

The CDAC design team began the project with an initial site visit to Walton Park in April 2006. The design team met with Mineral Town Manager, Willie Harper, Town Councilwoman Bernice Kube, Mineral Bluegrass Festival Coordinator Jimmy Dodd, area forester David Stone, and Louisa County Parks and Recreation Maintenance Supervisor Thomas Runnet. The group discussed how the park was currently used, expressed desires of community members for park additions, and perceived recreational needs for the Town and County.

The CDAC design team returned to the site several additional times to document existing site conditions, conduct a series of site analyses, and perform a tree inventory of the major, central overstory trees on site.

Members of the CDAC design team returned again in July to attend the annual bluegrass festival and see first hand how the park was used during this busy time. A separate analysis for the festival was prepared.

The CDAC design team presented site inventory and analysis findings as well as some initial, conceptual diagrammatic ideas to the Town Council and interested community members in August 2007. The design team utilized the feedback received at this meeting to guide the development of two preliminary conceptual master plans.

These two preliminary conceptual master plans were presented to the community for review and comment in November 2007. The CDAC team refined the concepts into one final conceptual master plan based on the feedback they received from Town staff and community members.

The final conceptual master plan was presented to Town and county staff and interested community members in December 2007. Some minor revisions were made to the final conceptual master plan based on comments received at the presentation.

This short supporting report was prepared to document the design process and describe the design concepts proposed by the CDAC team.



CDAC design team members, Town and County staff, and interested community members tour the park during the CDAC design team's initial site visit.



CDAC design team member Michael Blake presents a conceptual design option to community members.

Site Inventory

Walton Park is a lovely wooded park with mature, canopy trees, some gentle rolling hills, and a small stream/drainageway. The park is bounded on two sides by residential areas and is within walking distance of downtown. It contains multiple RV-hook ups, a stage, and a natural amphitheater or sorts. Two old stables are still on site, reminding long term community members of the park's former horse show days. Certain areas of the site have homemade overhead lighting and, in some places, a maze of wiring to accompany them.

A visitor coming through the main entrance will turn on an unidentified gravel road, past a commercial building and possibly some oil trucks, and through an open gate with a small sign. This visitor would most likely require previous knowledge of the parks existence to find it.

The three following 11x17 pullouts with photographs of the site keyed to a site map visually document the site's existing state. See page 19 for an inventory and composite analysis map.



Photo of Walton Park's existing entrance signage with the stage in the background.

WALTON PARK
MINERAL, VIRGINIA



Screen view out of park



Storage structure in need of repair



Flat open space: shows exposed utilities that may be screened and/or upgraded



Flat open space: shows exposed utilities that may be screened and/or upgraded



Flat open space: shows exposed utilities that may be screened and/or upgraded



Flat open space: shows exposed utilities that may be screened and/or upgraded



Flat open space: shows exposed utilities that may be screened and/or upgraded



Flat open space: shows exposed utilities that may be screened and/or upgraded



Main vehicular corridor within property



Exposed utility junction (unappealing)



Site lighting updated



Parks lone signage



Natural slope affords amphitheater possibility



Open space to the west of stage (possible pavilion location)



Performance stage affords great opportunities (needs general repairs)



Alternate view of possible pavilion location



Unnecessary bridge structure



Rear of stage unappealing



Degrading fence



Adjacent resident

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.

PHOTO ANALYSIS

WALTON PARK
MINERAL, VIRGINIA



21

Site circulation's visibility low and difficult to traverse



22

Possible pedestrian entrance to future neighborhoods



23

Overhead electrical wiring unappealing



24

Fence in disrepair



25

Site elements are uninviting



26

Intermittent stream quality presently low, naturalistic opportunity present



27

Stream quality on east side of property higher quality



28

Absence of undergrowth



29

Adjacent courts (screening possible)



30

One of three open spaces on property



31

Current restrooms in need of upgrade



32

Absence of understory good for viewshed



33

Logs strewn along circulation path (for seating)



34

Unappealing signage



35

Unnecessary gravel access



36

Cultural structure; possible asset



37

Cultural structure; possible asset



38

View of adjacent resident



39

Appealing habitat edge (trail opportunity)

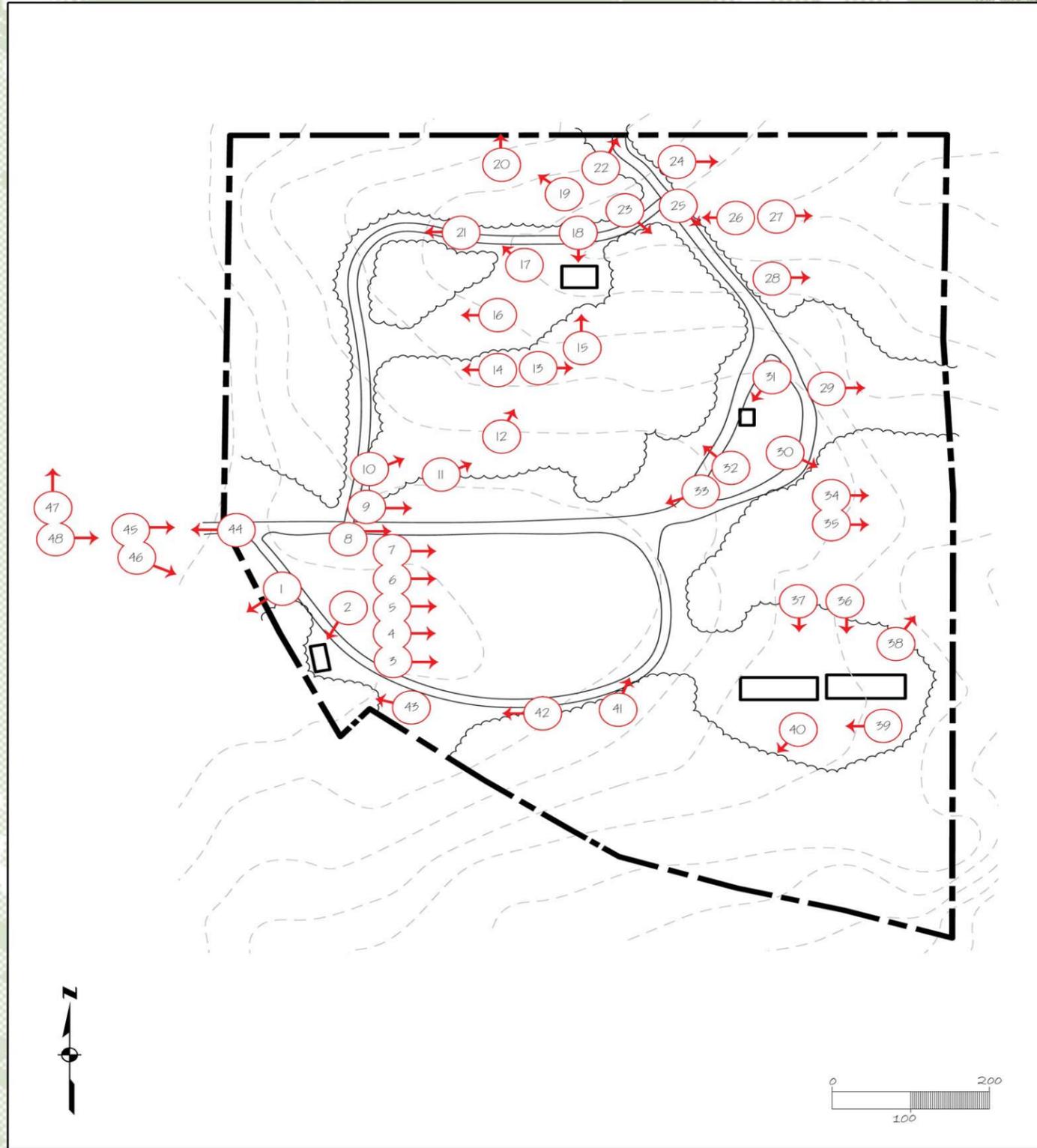


40

Wooded cove possible asset

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.

WALTON PARK
MINERAL VIRGINIA



41
Unaesthetic quality of utilities



42
Gravel access problematic for elderly, handicapped and toddlers



43
View out of park: screening unwanted views well



44
View exiting property visually unappealing



45
View entering the park unaesthetic, no park signage for uninformed park user



46
Great views into property upon arrival



47
Site entrance road (poor quality) lacks directional signage



48
Entire park entrance (formalized entrance opportunity)

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.

cd community design
dc assistance center
College of Architecture and Urban Studies
Virginia Polytechnic Institute and State University

PHOTO ANALYSIS

Site Analysis

The CDAC design team prepared a series of analysis maps to examine physical and sociological components that provide opportunities and constraints for Walton Park. Individual analysis maps were created pertaining to soils, slopes, hydrology, tree inventory and assessment, and festival use. Additionally, a composite analysis was prepared to document additional opportunities and constraints not captured in the previous analyses. Each of the aforementioned analysis maps are described individually on the following pages.



CDAC team member Brian Jank looks at the stream/drainage area on site.

Site Analysis (cont.)

Soils:

A soils analysis was conducted at Walton Park to examine what types of soils exist on site and to further inform the CDAC design team of options that could possibly be explored in order to address existing runoff conditions. Walton Park is comprised of three main soil groupings. They include Nason Silt Loam, Roanoke Silt Loam (a local alluvium), and Tatum Silt Loams.

Nason Silt Loam:

The Nason Silt Loams found on site possess topographic slope range of both 2 - 7% and 7 - 15%. The soil is commonly multicolored in shades of brown, red, yellow, gray, or white and are formed in material that has been weathered from schist and other fine grained metamorphic rock.

Nason Silt Loams found at Walton Park belong to Hydraulic Group C. These soils are known for being considerably deep with a slow infiltration rate when they become wetted. They chiefly have a layer that impedes downward movement of water or have moderately fine to fine texture and have a slow rate of water transmission.

Roanoke Silt Loam:

The Roanoke Silt Loam found on site possess a topographic slope range of 2 - 7%. This soil consists of poorly drained, nearly level soils on stream terraces that have been formed in alluvial sediment. The surface layer of the soil is predominantly dark grayish-brown silt loam typically 9 inches thick. Beneath its surface is a gray subsoil about 33 inches in depth with a upper subsoil of mottled brownish yellow to dark gray clay loams.

Roanoke Silt Loams found at Walton Park belong to Hydraulic Group D. These soils are known to possess a very slow infiltration rate when they become thoroughly wetted. They chiefly consist of clay soils that have a high swelling potential, soils that have permanent high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. They also possess a very slow rate of water transmission.

Tatum Silt Loam:

The Tatum Silt Loams found on site possess a topographic slope range of 2 - 7%. This soil consists of mottled shades of yellow, red, or brown and have been formed by residuum from sericite schist, phyllite, or other fine-grained metamorphic rocks.

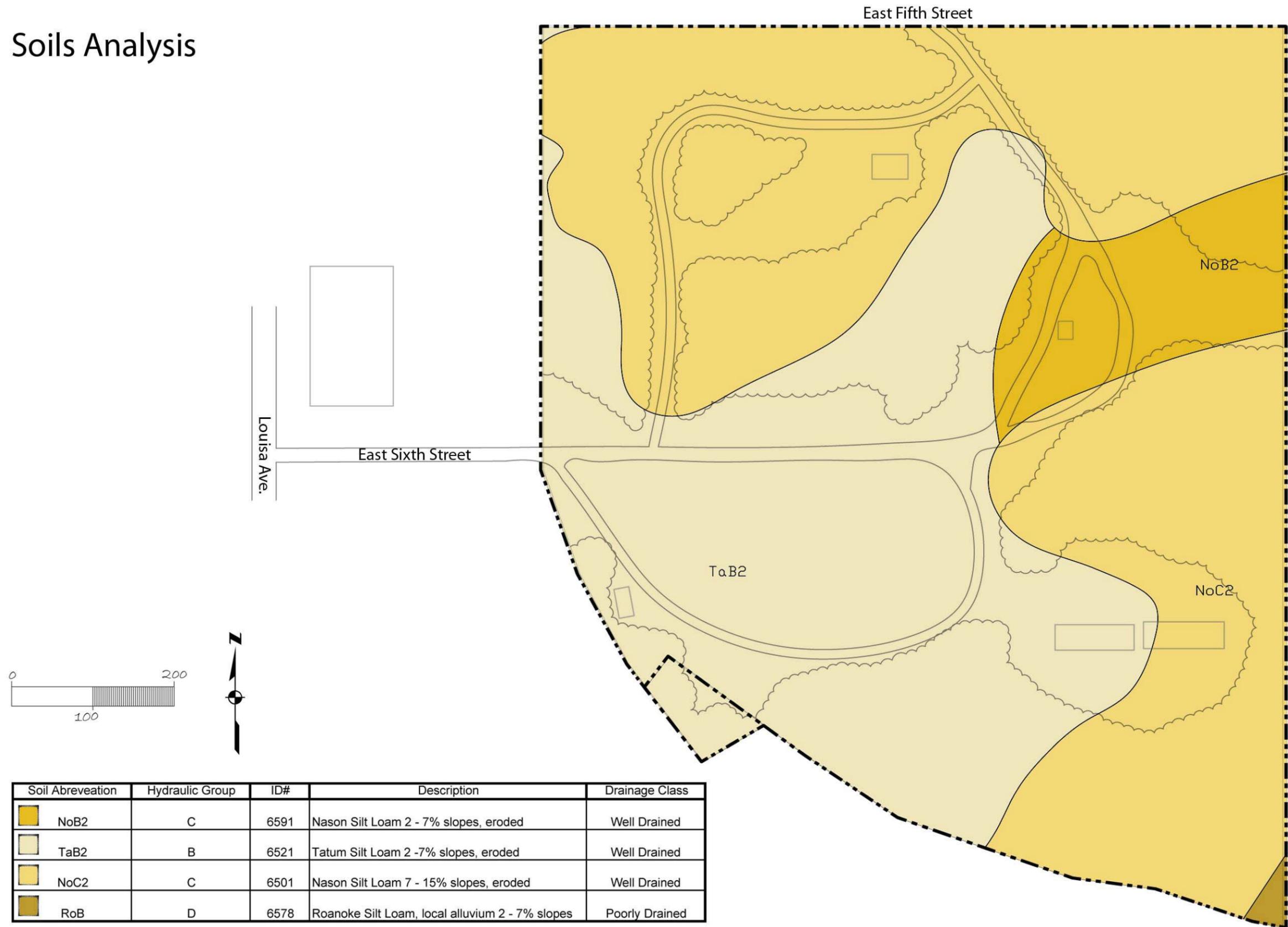
Tatum silt loams found at Walton Park belong to Hydraulic Group B. These soils are known to possess a moderate infiltration rate when they become thoroughly wetted. They chiefly are moderately deep to deep, moderately well drained to well drained soils that have moderately fine to coarse textures and possess a moderate rate of water transmission.



Photo of the initial site visit in April of 2007.

These soil properties, especially as they related to drainage and infiltration, lend some clues as to some of the run-off issues on site. The following 11" x 17" pullout highlights the variations of soil type. Soil amendments may be required in specific areas, such as in a proposed rain garden, to improve infiltration rates. The map has been fitted with a key to visually document the site's existing soils.

Soils Analysis



Site Analysis (cont.)

Slope:

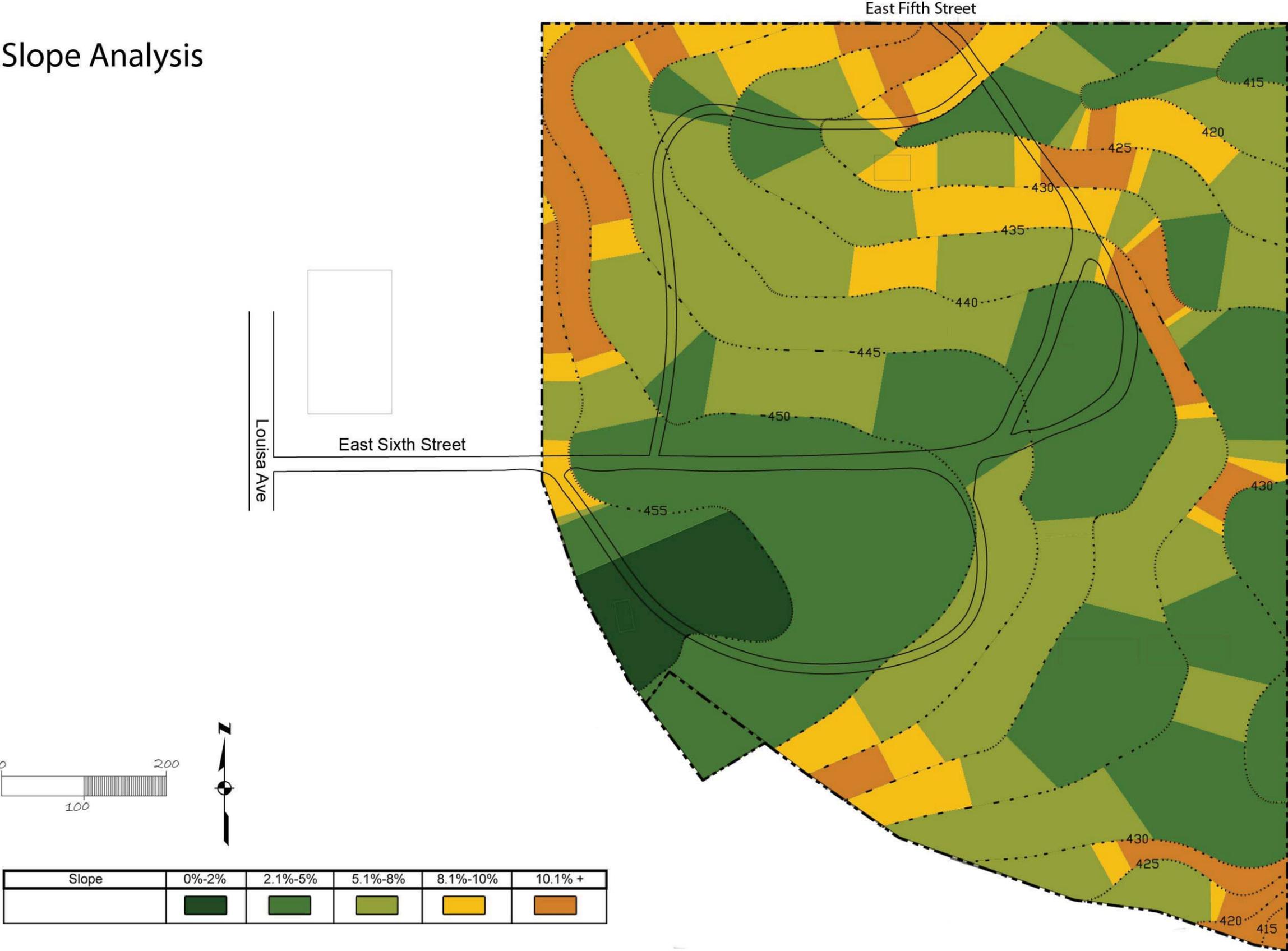
A slope analysis was conducted for Walton Park as part of the design team's process to determine suitable locations for development. The slope analysis map utilizes topographic information and divides the site into a range of slope categories. Each category is depicted graphically with a color corresponding to the slope range as can be seen on the 11x17 pullout on the following page.

Areas with slope ranges between 0 and 5% will be most conducive to active recreation such as soccer or t-ball. The majority of the site has gently sloped to rolling terrain (between 2 and 8%), with a few areas with steeper slopes (8% or greater). These areas are well suited for walking or jogging trails of varying intensity, as well as a natural amphitheater. Care should be taken in areas with slopes greater than 10% to be sure any development does not become a source of erosion.



Photo take of the existing tree understory and gradual upward slope of the land to the main entry gate of Walton Park.

Slope Analysis



Hydrological Analysis:

Hydrology:

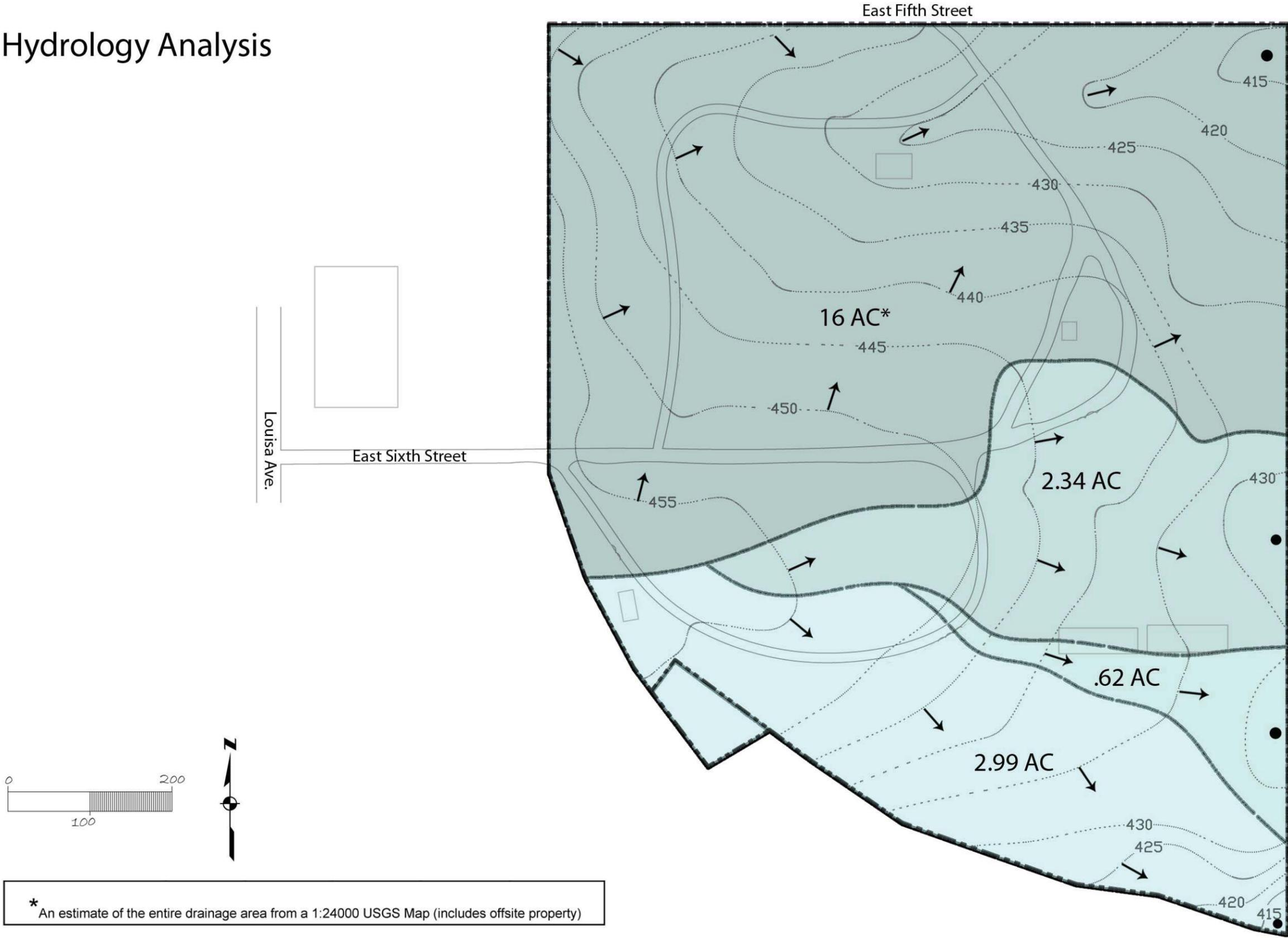
A hydrological analysis was conducted for Walton Park as part of the CDAC design team's process to determine the existing drainage areas, major swale locations, and the amount of over land runoff that may occur.

Walton Park is divided into four sub-watersheds, each of varying acreage. The drainage patterns within each sub-watershed are indicated on the 11x17 pullout on page 13. This recorded data was later used in the design process along with previous slope and soils data to inform the design team as to where and how on-site water management practices needed to be implemented.



Photo taken of exposed stream located in the 16 acre drainage basin.

Hydrology Analysis



* An estimate of the entire drainage area from a 1:24000 USGS Map (includes offsite property)

Site Analysis (cont.)

Tree Inventory:

A tree inventory of Walton Park was conducted over a three day period in July 2007. The inventory was conducted using a handheld computer running ArcPad software. The trees' locations were positioned using GPS in conjunction with an aerial photo of the site. A script set up within ArcPad allowed various attributes for each tree to be recorded as follows:

Scientific and common names

Diameter at breast height (DBH) - inches

Tree height

- 0-5 ft.
- 5-15 ft.
- 15-25 ft.
- 25-40 ft.
- 40+ ft.

Crown radius - feet

Condition

- Good* – No apparent problems
- Fair* – Minor problems
- Poor* – Major problems
- Dead* – No signs of life

Trunk problem (could pick up to 3 most applicable)

- Decay* – Decomposition of wood by microorganisms
- Crack* – Separation of the wood; a deep split through the bark and into the wood
- Lean* – Orientation of the trunk is not vertical
- Cavity* – Void caused by complete decay of wood
- Codominant* – Multiple upright stems of similar height and diameter
- Wound* – Tearing of bark, crushing of inner bark/cambium from physical contact by equipment, vandalism, lightning
- Pest* – Signs/symptoms of damaging insects, disease pathogens, animals, or parasitic plants
- Object* – Any object that is physically attached or situated close to the stem and causing injury
- Arborist Evaluation* – Has major trunk problems, needs expert evaluation

Crown problem (could pick up to 3 most applicable)

- Decay* – Decomposition of wood by microorganisms in major scaffold branch(es)
- Crack* – Separation of the wood; a deep split through the bark and into the wood in major scaffold branch(es)
- Weak union* – Large epicormic branch(es) or major scaffold branch(es) with included bark
- Poor form* – Vertical or horizontal imbalance in

Crown problem continued:

- branch distribution
- Wound* – Tearing of bark, crushing of inner bark/cambium from physical contact by equipment, vandalism, lightning
- Pest* – Signs/symptoms of damaging insects, disease pathogens, animals, or parasitic plants
- Dead wood* – Significant accumulation of dead branches in crown
- Object* – Any object that is physically attached or situated close to the stem and causing injury
- Decline* – Overall thinning of foliage and live branches due to stress
- Chlorosis* – Yellowing of foliage
- Necrosis* – Death of foliage
- Topped* – Inappropriate pruning to reduce crown size
- Ugly* – Structurally sound, but not aesthetically pleasing
- Arborist Evaluation* – Has major crown problems, needs expert evaluation

Conflict – The tree is in direct conflict with one or more of the following:

- Utility*
- Light*
- Building* - requires 4 foot clearance

Notes – additional information deemed important: i.e. poison ivy, attached electric wires, etc.

Condition ratings were assigned based on the overall condition of each tree as determined by the extent of problems related to the health and structure of the crown and trunk of each tree. Ratings were assigned based on relative ratings applied to other trees on the site and similar sites and tree species, as well as based on the training and experience of the personal conducting the inventory. Root and soil problems were not evaluated in this survey due to time limitations. No dead trees were found on this site at the time of the survey as it followed recent tree work to remove dead and declining trees from the park.

Attribute data collected on crown and trunk problems, as well as in the notes section, provide detail for the assigned condition ratings. The greater number of problems and the greater the extent of individual problems within a tree, the lesser the condition rating.

Site Analysis (cont.)

This tree inventory indicated a tree canopy dominated by mature oak trees, with half (50%) of the trees being white oaks (*Quercus alba*). Red maples (*Acer rubra*) made up 12% of the trees inventoried, while the remainder of the species observed each made up less than 10% of the number of trees inventoried (Figure 1). While conducting this inventory, a number of oak trees were recorded as being southern red oaks (*Quercus falcata*), however, these trees are more likely to be black oaks (*Quercus velutina*). Regardless of the specific species, both are part of the red/black oak group and thus have similar growth habits and maintenance issues. Over half (52%) of the trees inventoried on this site were in fair condition, with 40% in good condition and only 8% in poor condition (Figure 2).

The results of this inventory provide useful information for management. From a safety standpoint, management should target arborist evaluation of trees in poor condition and those that were noted as needing arborist evaluation (regardless of condition). Given the overall maturity of the canopy, management plans should focus on planting to maintain a canopy cover. Planting should occur in openings in the canopy (such as locations where trees were recently removed) in conjunction with plans for current and future use of the site to avoid use conflicts. To maintain a similar character to the canopy cover, plants should focus on deciduous trees similar to those on site including a variety of oaks, red maple, dogwood, black gum, and hickory trees. A large amount of dead wood was observed in the crowns of the trees inventoried. Management plans should include pruning operations to remove dead wood, especially in higher use areas of the park that would make the dead wood a greater hazard. Poison ivy was a problem in various areas of the park, with the vine found growing up a number of trees. Left untreated, these vines can be detrimental to the health of the trees and also pose a human nuisance. Management plans should include periodic spraying and/or mechanical removal of poison ivy and other vines.

Figure 1: Walton Park Trees by Species

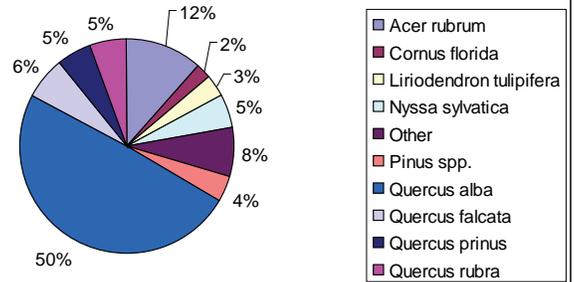
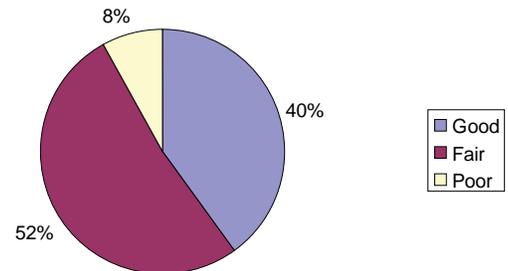


Figure 2: Walton Park Trees by Condition



Tree Inventory



Site Analysis (cont.)

Festival Analysis:

In July of 2007 the CDAC team spent a day at Walton Park's annual bluegrass festival to see first hand the transformation the park undergoes. Walton Park transforms overnight into its own small community consisting of musicians, spectators, vendors, and campers from all over the eastern United States.

The normally vacant stage and the gently sloping hillside that faces it becomes the focal point and primary gather space for the festival. The spectators stake their claim on chair space under tree canopy or pitched tent for a good view of the stage and a reprieve from the heat of late July. Along the perimeter of this natural amphitheater, a multitude of vendors selling anything from hot dogs to music equipment set up their tents establishing their home for the entirety of the festival.

Beyond the perimeter of the vending area both large and small RV campers along with several dozen tent campers seem to fill in the remainder of the open spaces of the park.

The park's main entrance serves at the point of ingress and egress for all attendees. Day parking for the festival is adjacent to the park, on a flat grassed area owned by Mineral's volunteer fire department. Performers enter the site through the park entrance on 5th Street.

With no permanent restrooms on site, port-a-jons and several hand-washing stations are temporarily stationed in the park.

The CDAC design team prepared a short survey for festival attendees that was distributed at the festival entry point. A copy of the survey as well as a list of open-ended responses can be found in Appendix G.

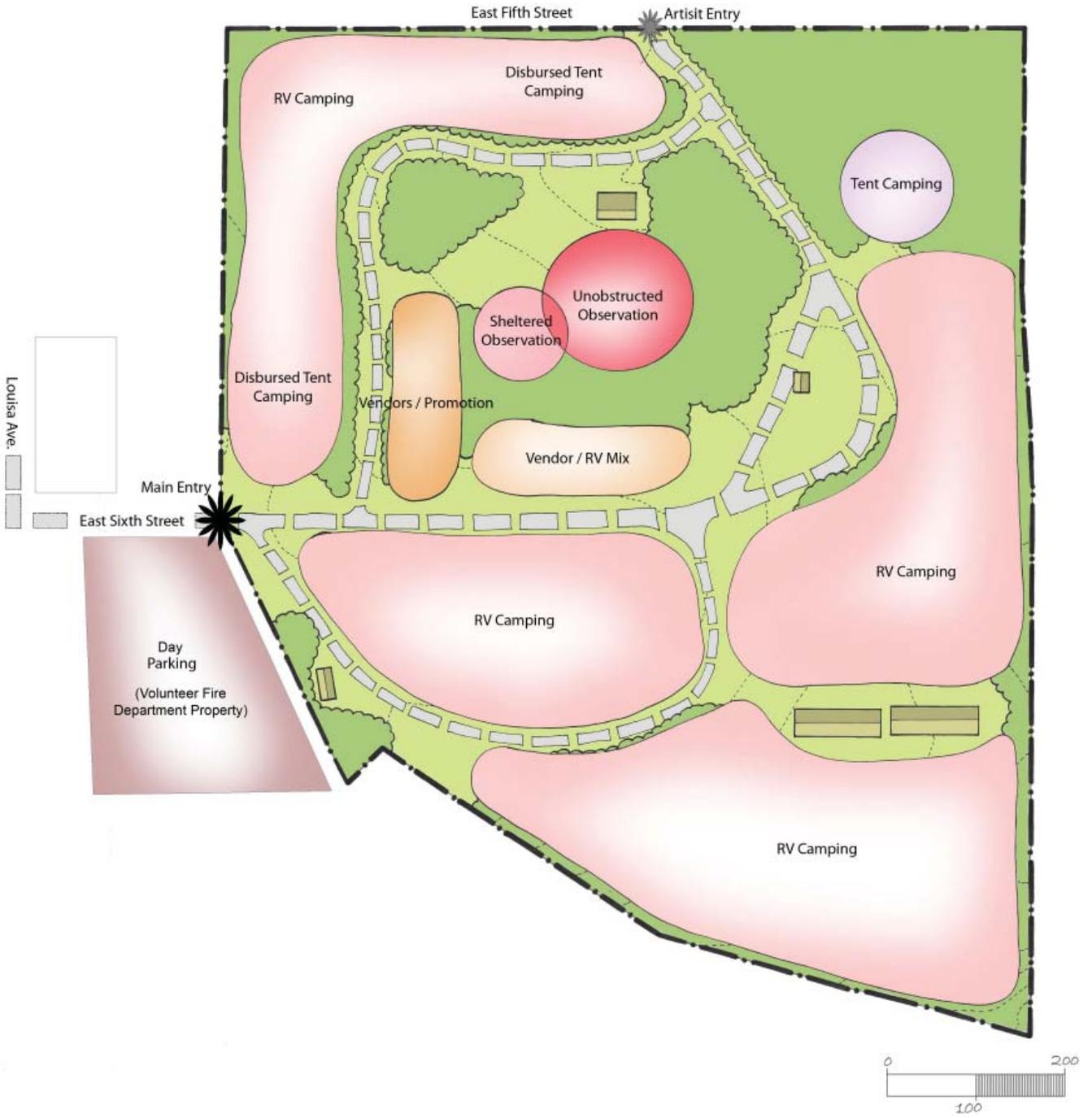


The natural slope of this section of Walton Park serves as a good informal amphitheater during the annual bluegrass festival.



RVs can be found in almost every section of the park that will accommodate them during the festival.

Festival Analysis



Site Analysis (cont.)

Composite Analysis:

The CDAC design team also prepared a composite analysis of Walton Park, identifying existing features, future opportunities, and possible limitations to address. Elements and features identified include existing swales, areas of erosion, stream, vehicular circulation, entry points, vegetation, structures, fencing, open space, views, adjacent properties, and underlying water and sewer lines.

The information obtained during this process was used to aid and inform the design development phase of the project. The composite analysis, as well as the other analyses, provided the design team with a framework to analyze which spaces were most suitable for recreational activities, new structures, parking, or trails.

An 8.5x11 of the composite analysis can be found on the following page.



Photo taken during the initial site visit in April, 2007 of one of the two existing horse stables on site.

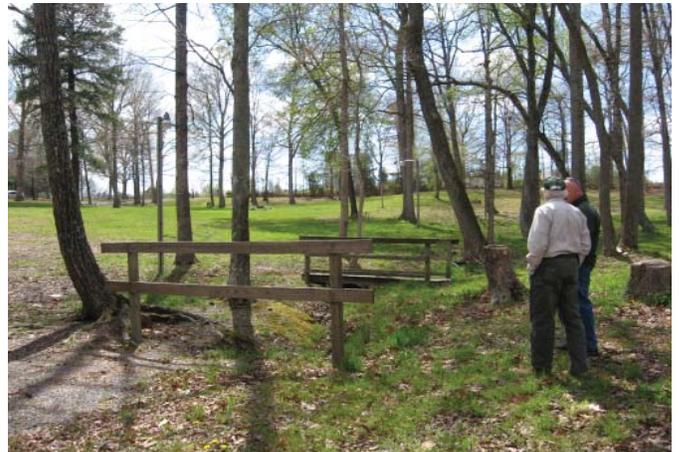


Photo taken during the initial site visit in April, 2007 of existing exposed stream and footbridge.

Composite Analysis

A. STAGE:
USED DURING THE PARK'S ANNUAL BLUEGRASS FESTIVAL. IT IS LOCATED ALONG THE CREEK CORRIDOR AT THE BASE OF THE HILL.

B. SECONDARY ENTRANCE:
ENTRANCE IS CURRENTLY GATED AND USED PRIMARILY FOR PARK MAINTENANCE AND BY PERFORMERS DURING THE BLUEGRASS FESTIVAL.

C. WATER MAIN:
THE LINE RUNS ALONG EAST FIFTH STREET AND IS CONNECTED TO AN EXISTING FIRE HYDRANT AND WALTON PARK'S PUMP HOUSE.

D. CREEK:
RUNS ALONG THE BACK SDIE OF THE STAGE. THE CREEK HAS BEEN PIPED UNDER TWO EXISTING ROADWAYS THAT CROSS ITS PATH. THE CREEK SEEMS TO BE IN FAIR CONDITION, WITH BANKS THAT COULD BE IMPROVED.

E. FENCE LINE:
FENCING ALONG THE PERIMETER OF THE PROPERTY IS CONSTRUCTED OF OLD AND DILAPIDATED SNOW FENCING. IT IS IN POOR CONDITION AND IS FALLING DOWN IN MANY PLACES.

F. PUMP-HOUSE:
CONNECTED TO THE TOWN'S WATER MAIN.

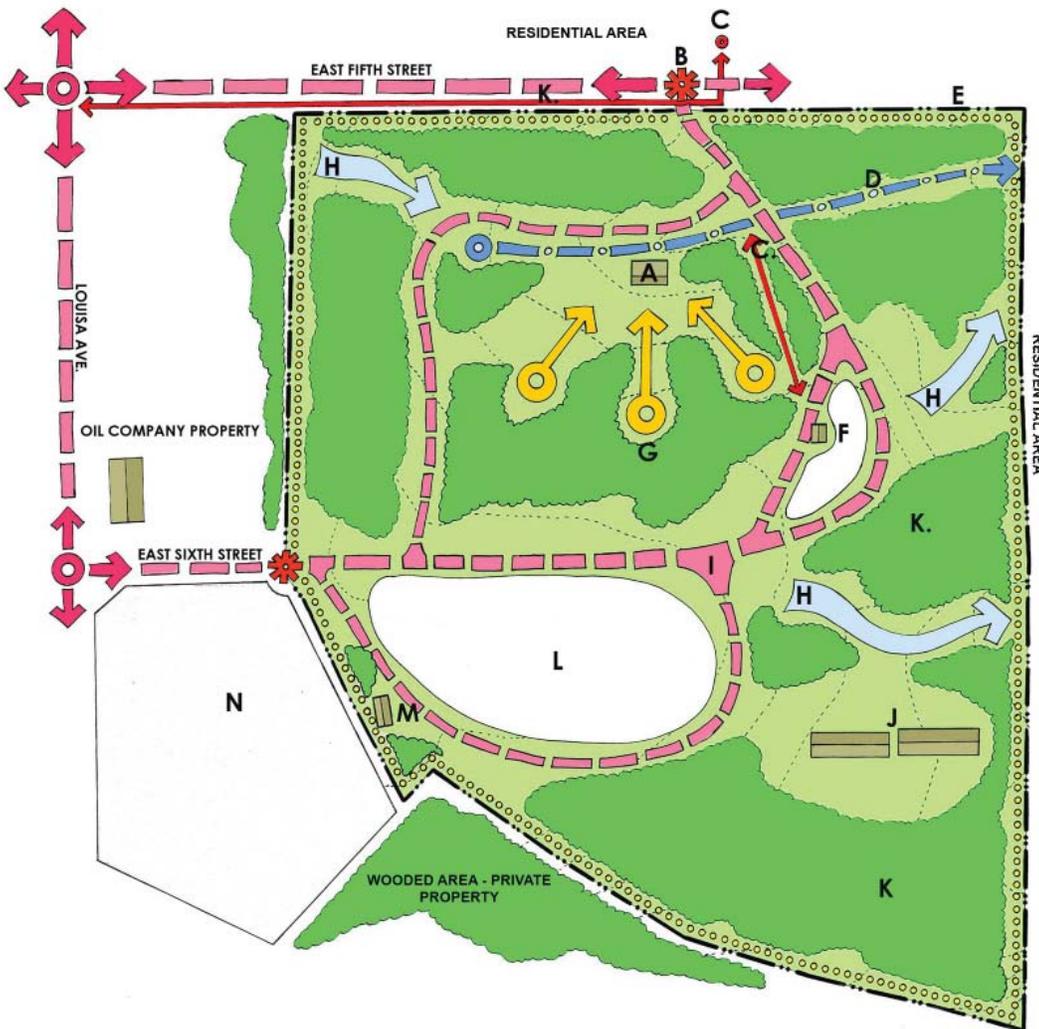
G. VIEWS / HILLSIDE:
THE EXISTING HILLSIDE SLOPES DOWNWARD TOWARD THE STAGE, FUNCTIONING AS A NATURAL AMPHITHEATRE. THE HILLSIDE IS GRASSED AND IS SHADED BY LARGE CANOPY TREES.

H. SWALES:
THERE ARE THREE MAIN SWALES LOCATED ON SITE. IN ALL THREE LOCATIONS, SIGNS OF EROSION ARE PRESENT.

I. PARK CIRCULATION:
THE ACCESS ROADS IN THE PARK ARE IN FAIR TO GOOD CONDITION AND ARE CONSTRUCTED OF GRAVEL.

J. HORSE STABLES:
THE EASTERN STABLES ARE UNUSED, EXCEPT FOR INFORMAL USE DURING THE BLUEGRASS FESTIVAL. THE WESTERN STABLES ARE USED FOR STORAGE. BOTH SETS OF STABLES ARE IN POOR CONDITION.

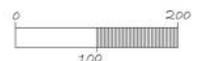
K. VEGETATION:
THE EXISTING VEGETATION ON SITE, IN GENERAL, IS IN FAIR TO GOOD CONDITION. THE TREE ANALYSIS EXAMPLES TREE HEALTH IN MORE DETAIL. OVERTORY TREES AND TURF GRASS ARE THE PRIMARY FORMS OF VEGETATION FOUND ON SITE.



N. PRIVATE PROPERTY:
OWNED BY THE VOLUNTEER FIRE DEPARTMENT. THIS LAND IS USED FOR PARKING DURING THE ANNUAL BLUEGRASS FESTIVAL.

M. SHED:
EXISTING SHED IS IN POOR CONDITION AND IS PRIMARILY USED AS A STORAGE FACILITY.

L. OPEN PLAYING FIELD:
LOCATED NEAR THE ENTRANCE OF WALTON PARK. THE FIELD IS VACANT AND CONTAINS MANY RV ELECTRICAL HOOK-UPS.



Initial Conceptual Diagrams

The CDAC design team presented two alternative conceptual diagrams to Mineral's Town Council and to citizens in attendance at the August 2007 town council meeting. The diagrams illustrated some initial design possibilities for the park and were used to initiate a conversation with Town staff and residents about what elements and activities they would like to see in the park. The feedback the CDAC design team received at this meeting was used to shape the preliminary design concepts. The two initial conceptual diagrams are shown and described on the following pages.

Initial Conceptual Diagram A:

Initial Conceptual Diagram A uses the existing road system and vegetation as the underlying structure of site. Placement of support facilities such as restrooms and shelters is structured around proposed activities and possible future functions on site such as concerts, cookouts, family reunions, and other recreational opportunities.

Diagram A proposes two parking areas, one near the park entrance and proposed soccer fields, the other closer to the southeast boundary and adjacent to proposed shelter and multipurpose open space. An overflow parking area has also been identified for use in the case of large events such as concerts or festivals. This space is currently used as the parking area for the annual blue grass festival.

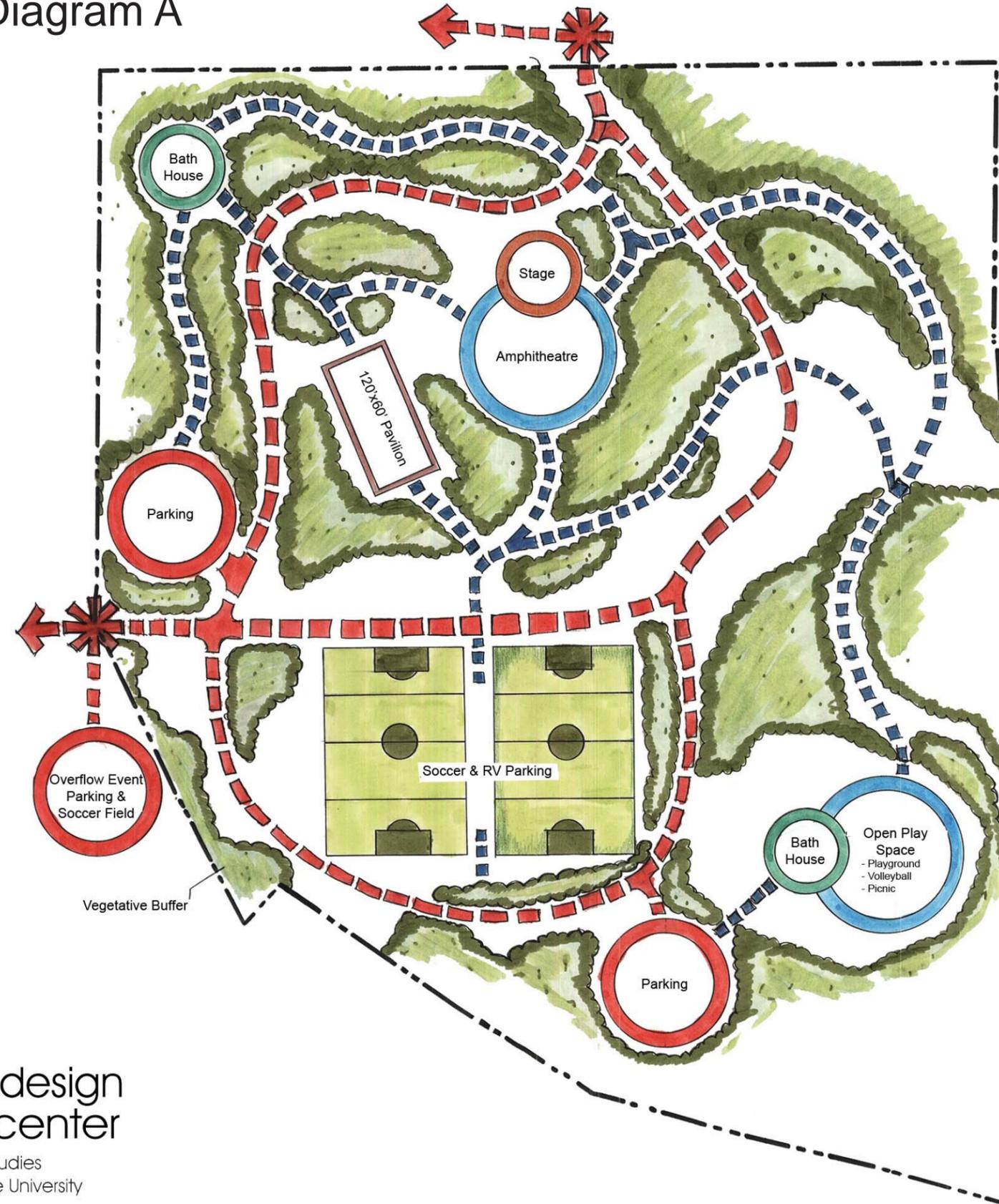
Diagram A suggests that some of the current structures on site should be upgraded, while others should be replaced altogether.

An 11x17 pullout of Initial Conceptual Diagram A can be found on the following page.



CDAC team member Dan Dart presents site inventory photo boards and initial conceptual diagrams at the August 2007 Town Council meeting.

Initial Conceptual Diagram A



█ Vehicular Access
█ Pedestrian Access



Scale: 0' 50' 100'

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.

Initial Conceptual Diagrams

Initial Conceptual Diagram B:

Initial Conceptual Diagram B takes a different approach to the use and experience of Walton Park. It removes the majority of the existing road system and creates a small, linear access strip, with parking and a turn around. The remainder of the park is intended to be entirely pedestrian in nature, with a large walking trail running along the perimeter of the site.

Two shelters, of different proportions, are proposed on site. A larger shelter is proposed in the vicinity of the existing stage. This shelter could be used for larger gatherings such as reunions, company picnics and parties. The base also doubles as a tennis court.

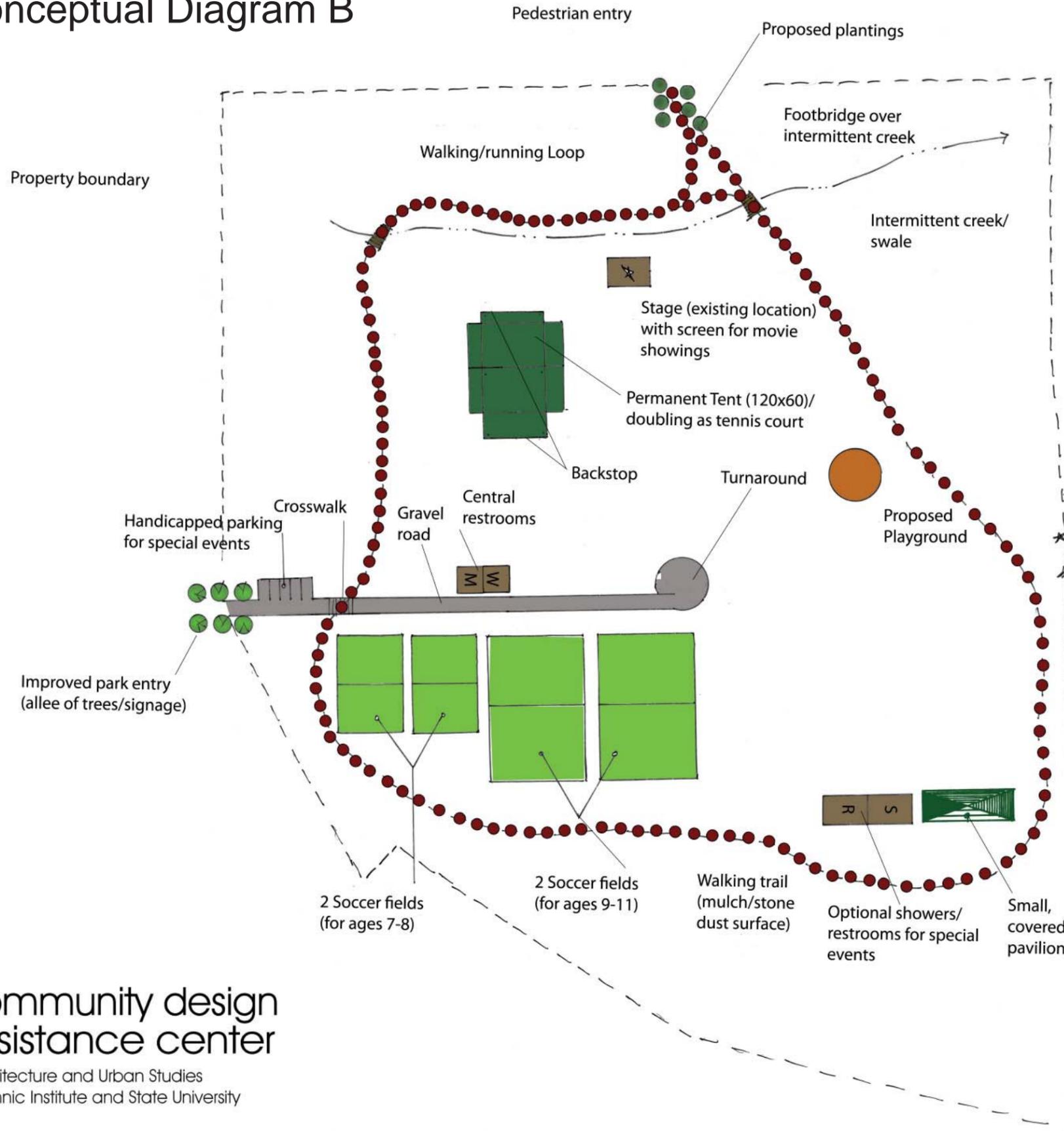
Active recreation is proposed on the southern half of the site, with the addition of soccer fields for several age groups. A playground, restrooms/bathhouse, and some additional plantings are also proposed.

An 11 x 17 pullout of Initial Conceptual Diagram B can be found on the following page



Photo of existing open lawn. This is the area where youth soccer fields have been proposed.

Initial Conceptual Diagram B



↑
N
Drawing not to scale

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.

Preliminary Conceptual Designs

The CDAC design team presented two preliminary conceptual design alternatives to community members and Town and County representatives in November 2007. Explanations of each preliminary design alternative as well as an 11x17 graphic of each concept can be found on the following pages.

Preliminary Concept A

In Preliminary Concept A, the CDAC design team explored the opportunity of creating a park that would be entirely devoted to pedestrian circulation.

The initial thought behind this design concept was to limit the operation of motor vehicles within park boundaries to a nominal level (for maintenance, emergency, and ADA access only) and to provide potential users with a safe environment where one can enjoy recreation without fear or concern of vehicles. A gravel parking lot is sited on the adjacent property along East 6th street that is owned by the local Volunteer Fire Department. This lot would serve as the main parking facility for Walton Park, as well as a potential space for a future farmer's market. Entry signage and allee of trees have also been added to create a more pronounced entry to the park.

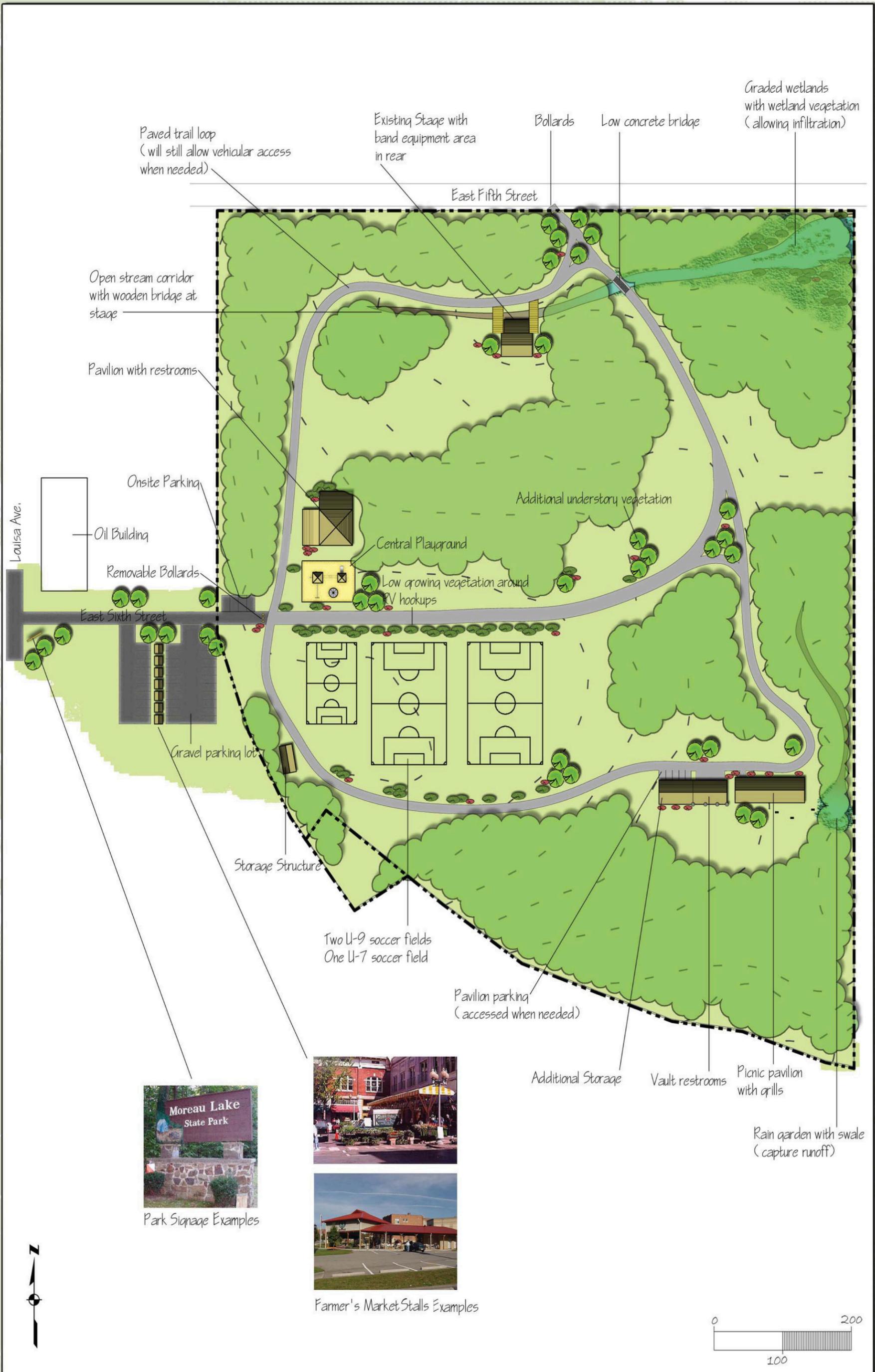
The major proposed circulation structure of the park will consist of a walking/ jogging loop constructed of either crushed stone or pavement that encircles the heart of the park. Proposed within the walking loop are three youth soccer fields, a playground, two newly constructed pavilions with restrooms. The plan suggests that the existing stage remain in its current location, but that the structure should be upgraded and enlarged to accommodate a covered shelter warm-up area for performers.

Preliminary Concept A addresses storm water issues on site with proposed rain gardens and bio-swales in order to capture and infiltrate potential rain water runoff.



CDAC team member Dan Dart describes Preliminary Concept A.

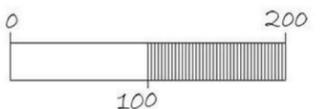
WALTON PARK
MINERAL, VIRGINIA



Park Signage Examples



Farmer's Market Stalls Examples



CONCEPT A

Preliminary Conceptual Designs

Preliminary Concept B

In Preliminary Concept B, the CDAC design team proposed a restructuring of the current vehicular circulation system. Though cars and parking were accommodated on site, by routing the road system and structuring the parking around the perimeter, the CDAC team was able to dedicate a core perimeter area to recreational activities undisturbed by cars.

The primary parking area is sited near the entrance to the park. This 39-space lot is close to the playground and proposed shelter, making trips and events convenient for people with small children or groups carrying in a lot of food. Two smaller parking areas are also proposed, near activity spots.

Concept B proposes that the relatively flat area on site be utilized as three youth soccer fields. These fields will be bounded by vegetative hedge rows that serve to both screen the existing electrical hook-ups and create a buffer between youth soccer players and the structures.

Another feature of Concept B is the addition of defined terraces for the amphitheater.

A restroom / bathhouse and a new concessions and storage building are also proposed.



CDAC team member Michael Blake describes Preliminary Concept B.

WALTON PARK
MINERAL VIRGINIA



Bath house Pavilion Existing stage Footbridge Bridge Exposed creek

East Fifth Street

Louisa Ave.

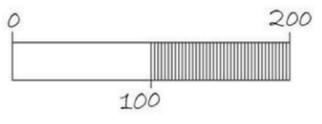
Oil building
Gravel parking lot with 39 spaces
Playground

East Sixth Street

Amphitheater
Continuous open green

Additional parking

Formal entrance Storage shed Three proposed U-8 soccer fields 10 gravel parking spaces for soccer field access 9 gravel parking spaces for pavilion access Pavilion / Volleyball Courts Two regulation volleyball courts and a picnic pavilion 20X30



CONCEPT B

Final Conceptual Master Plan

The comments received at the preliminary design concept presentation were used to refine the ideas into a single conceptual master plan that addressed the expressed desires and concerns of community members and Town staff.

The Final Conceptual Master Plan was presented to the Louisa County Forester, David Stone, and to Town and County staff and community members in December 2007. A few slight changes were made to the master plan that was presented in December based on the comments received at the meeting.

The final design blends preferred elements of both preliminary concepts. It includes a single direction roadway encompassing the outer edges of the site, creating a large central activity space unimpeded by the presences of vehicles passing through. This space includes three U-8 youth soccer fields bordered by a row of shrubs which visually conceal and physically separate existing RV electrical hook-ups for future park users. Also included in this central space is a playground, a 120' x 60' pavilion with built-in restrooms, a terraced amphitheater, and an improved performance area (stage). A proposed trail loop follows the perimeter of the site.

The park's entry experience has been redefined and enhanced with the addition of an allee of trees, an entrance sign off of Louisa Avenue, and a formal, gated entry at the Walton Park's eastern edge. Once entering the site, visitors can find a 43 space parking lot from which one can easily access the playground, large pavilion, or walking trail system. The CDAC team recommends the use of porous surfacing such as porous pavers for parking areas.

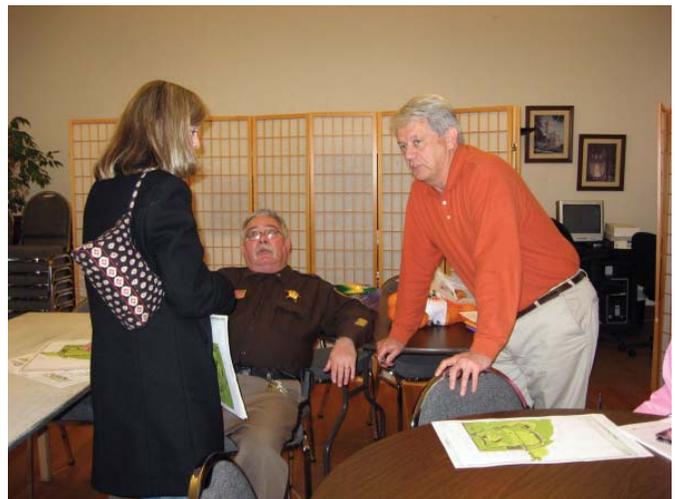
Two additional parking areas provide additional parking support for the soccer fields and a smaller covered shelter and multi-purpose field. The trail loop can also be accessed from these smaller lots. An ADA accessible vault toilet is proposed near the smaller, southern-most pavilion. Additional proposed structures on the site include a new concession area and a storage building.

The plan recommends improvement to the existing drainage swale/stream including modest regrading to create a small flood plain and revegetation to stabilize the bank and decrease erosion and sedimentation. A rain garden and a constructed wetland with a wooden bridge and view platform are also proposed. These elements would help retain storm water on-site and would also act as a best management practice demonstration, creating an educational opportunity. Additional information on rain gardens can be found in Appendix A.

Planting and material suggestion for the park can be found in other Appendices B, C, and D.



CDAC team members Dan Dart (left) and Michael Blake (right) present the final conceptual master plan and supporting sketches.

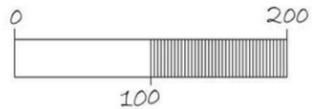


Willie Harper (right) discusses the final conceptual master plan with community members at the final presentation in December 2007.



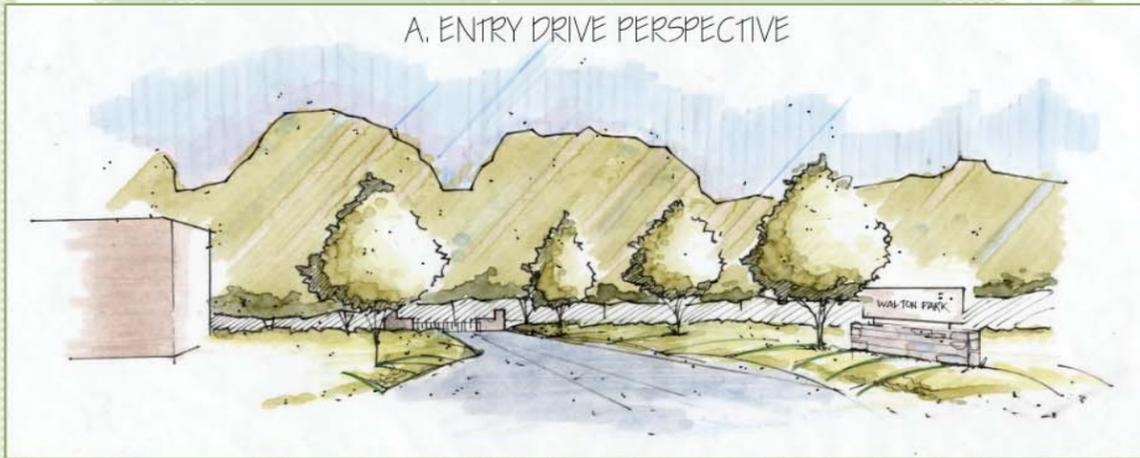
Tree Legend

-  Existing
-  Small tree
-  Shrub
-  Ornamental shrub

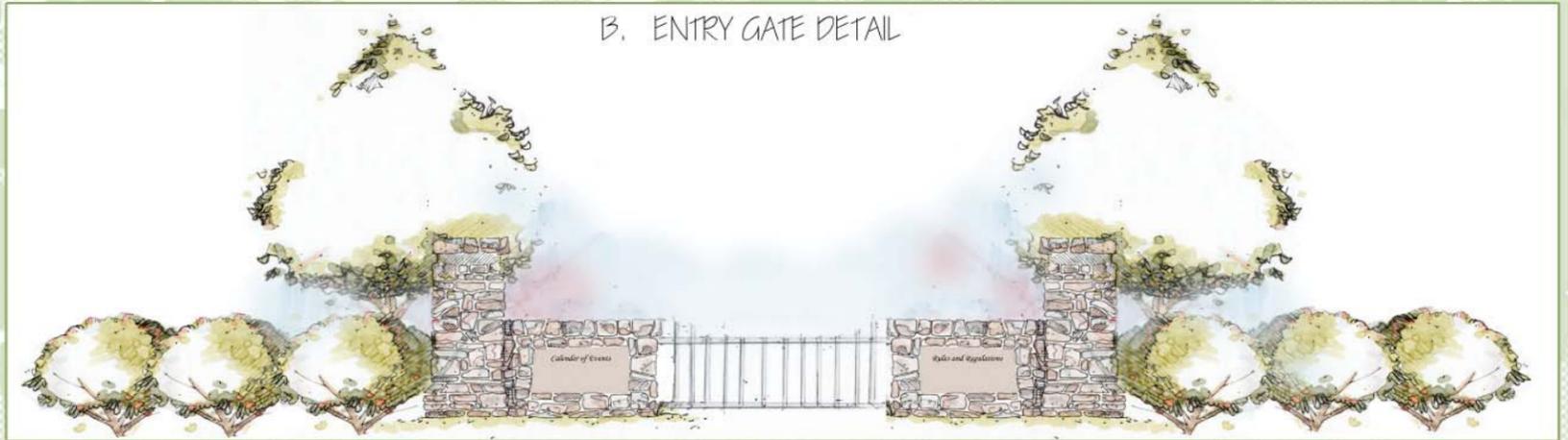


WALTON PARK
MINERAL, VIRGINIA

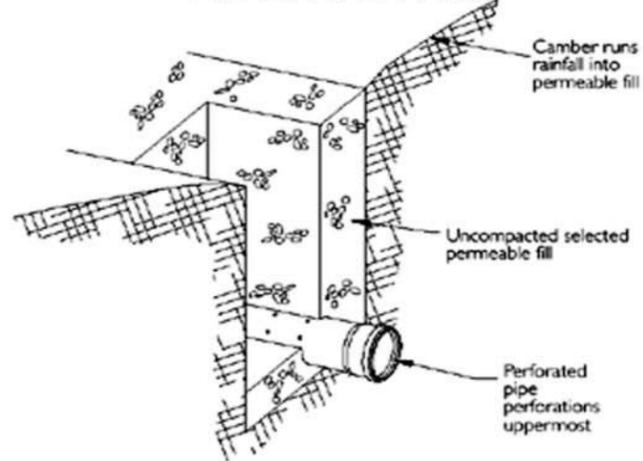
A. ENTRY DRIVE PERSPECTIVE



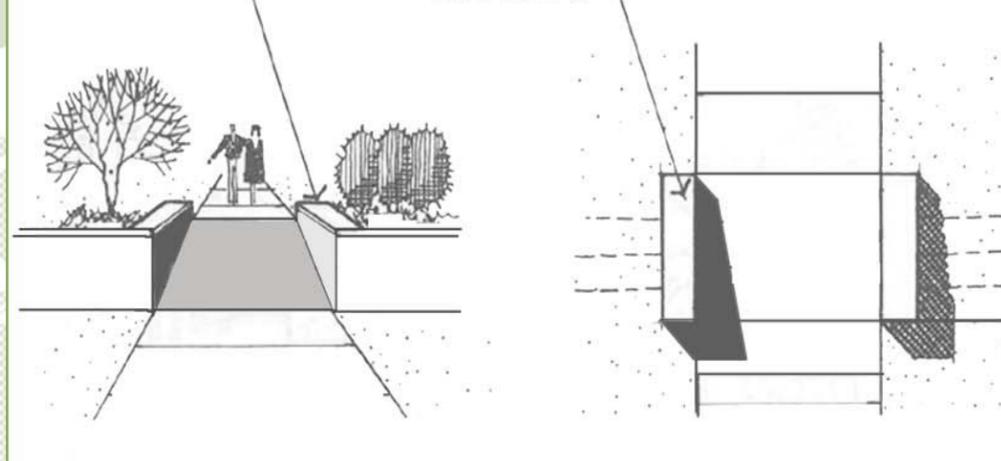
B. ENTRY GATE DETAIL



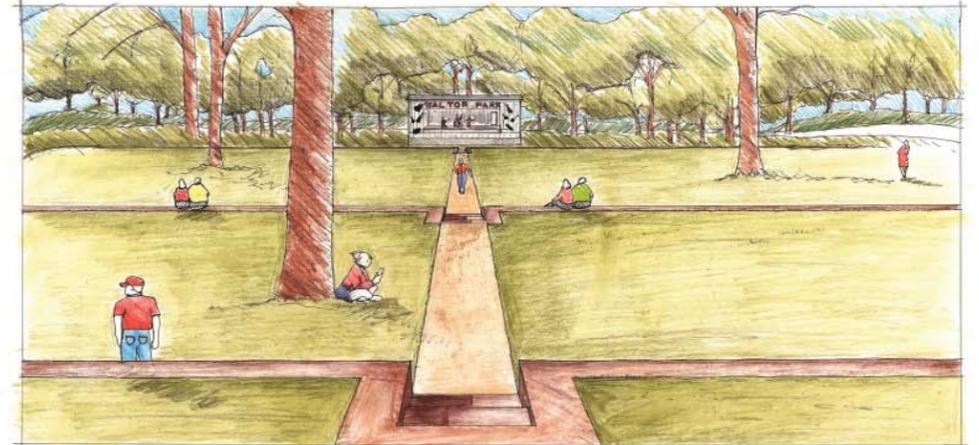
FRENCH DRAIN DETAIL



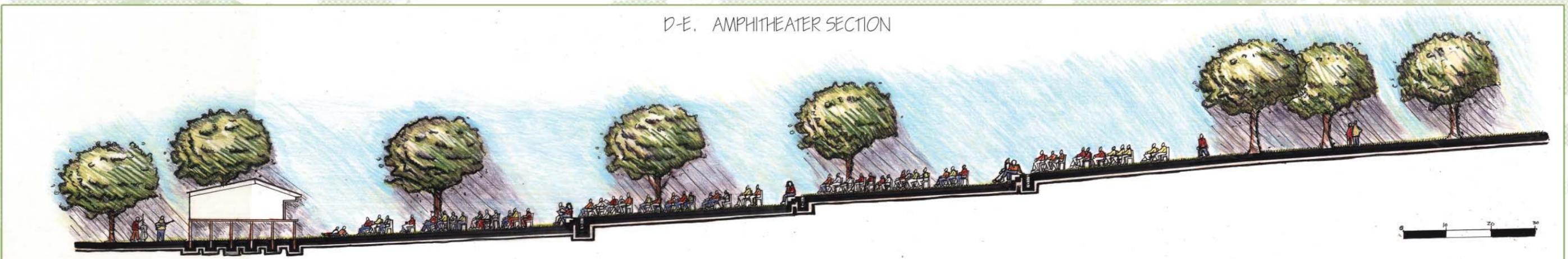
CHEEKWALL STEP DETAIL



C. AMPHITHEATER PERSPECTIVE



D-E. AMPHITHEATER SECTION



Phasing Recommendations

Implementation of the final conceptual master plan will likely be in several phases. The CDAC design team has divided the implementation of elements into four phases. Elements of greatest impact, importance, or greatest community good have been listed in the earlier phases. Depending on funding available, the improvements may be completed in more or less phases.

Phase 1:

- Walton Park entrance improvements including signage, and entry alley
- Hedge row plantings along border of future soccer field to screen RV electrical hook-ups
- Construction of permanent 120' x 60' pavilion with restrooms and grills.
- Graded wetland with boardwalk trail and observation deck and seating
- Rain garden and bio-swale

Phase 2:

- Gated entry and plantings
- Re-routed roadway and low concrete bridge structure to cross stream
- Parking lots
- Loop trail

Phase 3:

- Border definition - shrub hedge along northern and eastern property boundaries
- Playground
- Vault restroom
- Stage improvements

Phase 4:

- Terraced amphitheater
- Additional smaller pavilion
- Concession and storage buildings
- Additional landscape

Phase 5:

- Bath house



Photo taken of existing roadway conditions throughout the site.

Conclusion

Upon completion, the CDAC design team feels that the renewal of Walton Park will become an irreplaceable asset within the Town of Mineral and to many thousands of spectators who annually return to the park every July to participate in the Mineral Bluegrass Festival. The facility will serve as a great place for people of all age groups and abilities to come and participate in both active and passive recreational opportunities.

Walton Park will provide its users with an opportunity to participate in or watch a youth soccer match, take in a live show, gather with friends and family for a cookout, enjoy the playground, walk or jog a wooded trail loop, fly a kite, or just to relax in the sun or shade.



Photo taken of local participants guiding the CDAC design team through Walton Park.

Appendices



c d a c

Appendix A : Rain Gardens/ Bio-retention Swales

The following information has been taken from the Virginia Department of Forestry's website:
<http://www.dof.virginia.gov/rfb/rain-gardens.shtml>

What is a rain garden?

A "rain garden" is a man-made depression in the ground that is used as a landscape tool to improve water quality. The rain garden forms a "bio-retention area" by collecting water runoff and storing it, permitting it to be filtered and slowly absorbed by the soil. The bio-retention concept is based on the hydrologic function of forest habitat, in which the forest produces a spongy litter layer that soaks up water and allows it to slowly penetrate the soil layer. The site for the rain garden should be placed strategically to intercept water runoff.

A nutrient removal or "filtering" process takes place as the water comes in contact with the soil and the roots of the trees, shrubs and vegetation. This process accounts for the improved water quality. The first flush of rain water ponds in the depression of the rain garden, and contains the highest concentration of materials washed off impervious surfaces such as roofs, roads, and parking lots.

Creating a rain garden

Rain gardens are suitable for any land use situation, residential, commercial and industrial. A rain garden should be placed so that impervious surfaces will drain into the depression area. Its purpose is to minimize the volume and improve the quality of water entering conventional storm drains and nearby streams.

Each site should be considered unique. Microclimates (light, temperature and wind), and the size of the drainage area will influence the size of the rain garden and plant selection process. Software is being developed for sizing the gardens. The shape of the garden is not as important as the area available for bio-retention. The size of the bio-retention area should be 5% to 7% of the drainage areas multiplied by the crop "c" coefficient (the ground cover type). For example, a 3/10 acre drainage area would use a rain garden of about 600 square feet, or 15 x 40 feet.

The Virginia Department of Forestry has developed a technical guide, with step by step directions to create a rain garden as well as a suggested plant list. Portions of this guide are downloadable from <http://www.dof.virginia.gov/rfb/rain-gardens.shtml>. A hardcopy of the guide as well as a CD with the guide in PDF format have been sent to the client, along with this supporting report.



A rain garden at work in Blacksburg, Virginia



A rain garden under construction

Rain gardens are composed of several components. The following description of the different rain garden components and their functions has been taken from <http://www.dof.virginia.gov/rfb/rain-gardens.shtml>.

Components of a rain garden

Grass buffer: A grass buffer strip slows water as it enters the rain garden and its surface filters particulates from the runoff.

Ponding area: The ponding area stores the water, provides for evaporation, and allows the particulate material, not filtered by the grass buffer, to settle to the bottom. The ponding area should have a depth of 6 inches, sufficient to provide adequate water storage, but should not pond in excess of four days (to avoid mosquito and other insect breeding).

Mulch/organic layer: The mulch/organic layer provides for the decomposition of organic material, and also plays an important role in the removal of metals. Shredded hardwood mulch is the preferred choice, since it allows for maximum surface area for binding and resists flotation/washout.

Planting soil: Organic matter in the form of leaf mulch (20%) blended into a sandy soil (50%) with and about 30% top soil. The planting soil mixture provides a source of water and nutrients for the plants to sustain growth. Clay particles adsorb heavy metals, hydrocarbons and other pollutants.

Plants: A planting plan design should include species that tolerate extremes. There will be periods of water inundation and very dry periods. Most riparian plant species will do well in rain gardens. The choice of species should include plants that mimic forest habitat and have an aesthetic landscape value such as flowers, berries, interesting leaves or bark. Groundcovers, perennials shrubs and trees should be incorporated into the planting design.

Additional information on rain garden history, benefits, construction and maintenance can be found at:

<http://www.raingardens.org/Index.php>

<http://clean-water.uwex.edu/pubs/home.htm#rain>

Pages 36-43 offer concise suggestions for designing and constructing a rain garden.



Amending the soil with a premium blend soil mix.



This garden, under construction in the picture above, is now planted and hard at work.

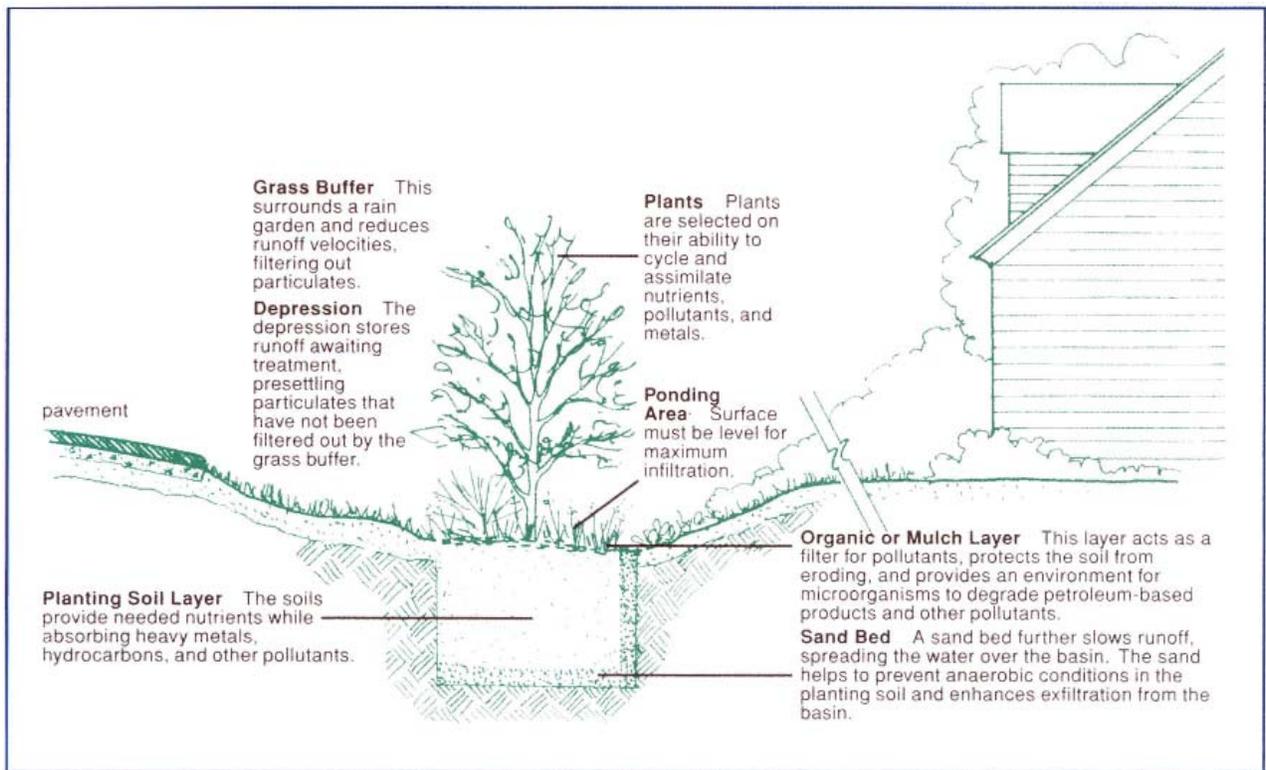


Figure 3: Cross section of a Rain Garden
<http://fairfaxcounty.gov/nvswcd/youyourland/landscape.pdf>

Before You Start

Professional tools for designing rain gardens are free!

You can get spreadsheets to calculate project size and price, engineering manuals, plant information, the latest research, and more at the following URL:

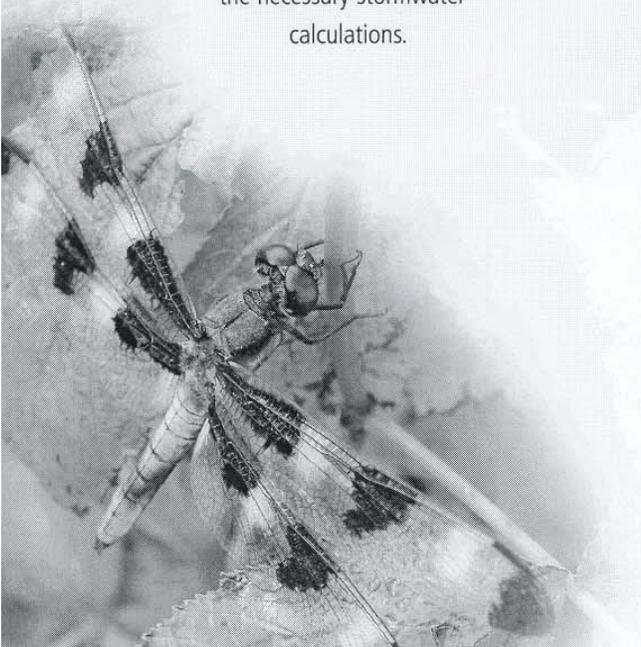
www.raingardens.org/docs/bioretenion_tools.pdf

Creating a Functional Design

Put your rain garden in the right place; down-slope from building foundations and up-slope from storm drain infrastructure. The most practical way to determine rain garden location is to visit the site. Re-grade to ensure stormwater goes into the rain garden. Direct overflow and under-drain flow to enter existing stormwater infrastructure.

Size the rain garden correctly.

Do not guess the amount of stormwater going into your rain garden. Use the free tools to perform the necessary stormwater calculations.



Evaluate existing soils. You should replace soils with an absorbent soil mix to ensure water will soak in. However, the characteristics of local soils also affect your rain garden. The in-situ soils must be able to infiltrate at a speed that prevents saturation. If they do not, you will need to design an under-drain and overflow plan. Special considerations apply in clay soils.

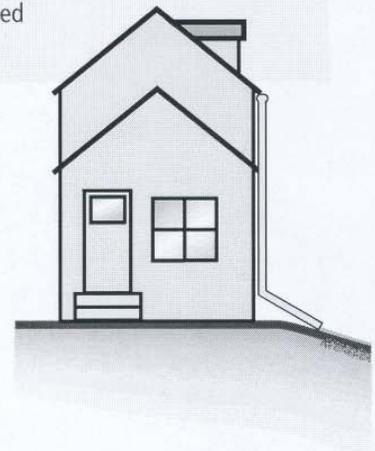
Be sure to budget for necessary costs.

Contractors who have never designed and constructed a rain garden before will want to do things the way they have always done them. The project may require additional supervision; plan for this expense. Group meetings are a good way to share information with project managers, engineers, excavators and landscapers.

Create an attractive design.

Rain gardens feature easy-care plants that are native to your region. Landscapers can create a planting layout that is both beautiful and functional, with attractive designs and drifts of color. Seeded or naturalistic rain gardens are economical and function well, but some people find them inappropriate in formal settings.

Give your rain garden a tended appearance (neatly defined borders, not weedy looking). Landscapers new to rain gardens or native plants may need guidance in plant selection. Do not choose aggressive species that you will need to divide frequently.



Constructing a Successful Rain Garden

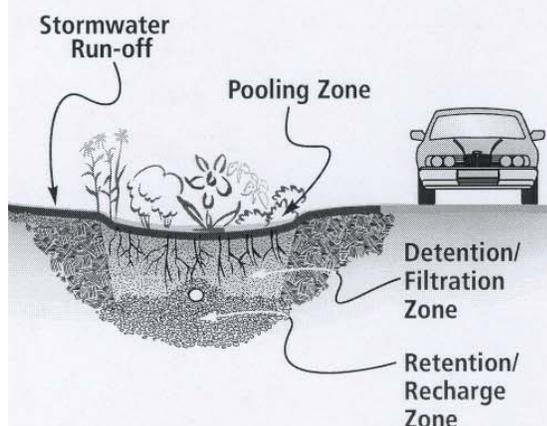
Seek contractors experienced with rain gardens, or those open to acquiring new skills.

Contractors unfamiliar with rain gardens may misunderstand the concept. Be sure you are actually creating a rain garden. The goal of a rain garden is to soak stormwater into the soil quickly, not to create a pond.

Replace soil to a depth that insures infiltration. Soil preparation is essential for success. Replace existing soils with a loose soil mix appropriate for your site. In heavy clay areas, research and experience indicate that a mix of sand and compost (no topsoil) works well. Additional drainage infrastructure will contribute to reliable infiltration. This prevents soil compaction, soil saturation and standing water.

Avoid soil saturation, especially in cold climates where the rain garden soil may freeze.

Be sure you have excellent infiltration and drainage. Overflow and under-drain plans are part of a successful project. A three-inch layer of shredded hardwood mulch helps keep the soil from freezing. Do not use bark chips, which wash away.



Stage construction carefully to avoid erosion.

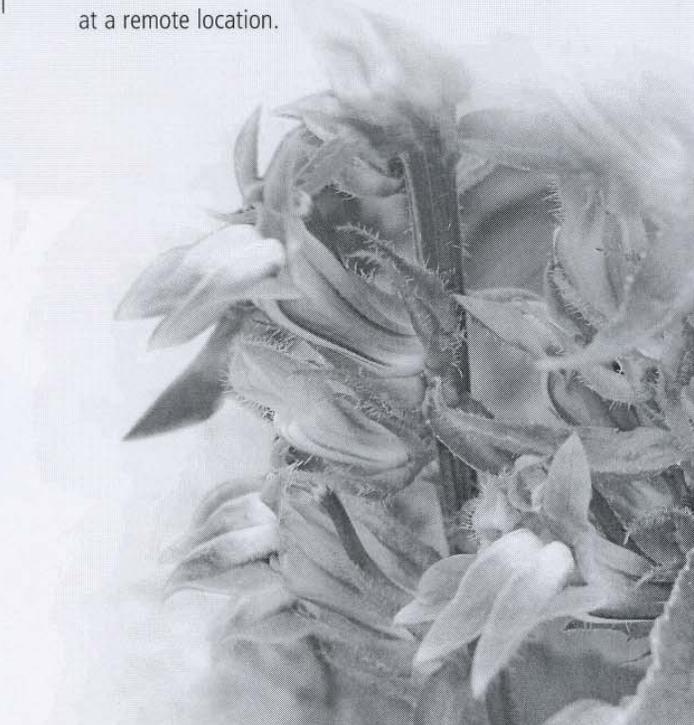
Protect the rain garden from erosion and sediment during and after construction. Sediment can seal the surface. Install effective erosion controls, and leave them in place until all site construction, including other landscaping, is completed.

The most common cause of failure of a rain garden is soil compaction. It is essential to avoid compaction of soils during all phases of construction.

Do soil placement and grading from the side. Prevent vehicles from driving on the rain garden. Place barriers to protect from foot and construction traffic.

Retrofits can be successful if you apply all design considerations.

You can sometimes convert existing detention or retention ponds into rain gardens. However, many smaller rain gardens scattered throughout a development will function better than converting a large pond at a remote location.



Maintaining a Beautiful Rain Garden

Care for your rain garden regularly.

Regular maintenance is required to keep your rain garden looking good and functioning well. Be sure to include this in your plan and your budget!

WATER: Water daily the first few weeks after planting, then regularly until plants are established. Later on, water in a drought if this is practical. You can install irrigation, and only turn it on manually as needed.

WEED: Weed on a regular basis, especially the first year. Educate people working in the rain garden. They may identify native plants as weeds.

MULCH: A rain garden planted with plugs or container plants benefits from a layer of shredded hardwood mulch. This reduces weeding and watering and helps establish the plants. It also prevents surface sealing of the rain garden, and removes specific pollutants from pavement runoff.

FERTILIZE: Should not be necessary. Native plants should thrive in the prepared soil mix. Avoid use of herbicides, pesticides, and fungicides in and around the rain garden.

KEEP SALT OUT OF THE RAIN GARDEN:

Salt destroys soil biology and damages plants. It builds up in the soil, and, over time, you will need to replace soil and plants. Use alternate deicers, but sparingly. If you cannot avoid salt, filter through the rain garden and carry away salty water with an under-drain.

Get the free bioretention tools!

www.raingardens.org/docs/bioretention_tools.pdf

www.raingardens.org

**Saving the Great Lakes,
one garden at a time**

Raingardens.org is a program of West Michigan Environmental Action Council in Grand Rapids, Michigan.



We promote keeping stormwater on site in the Great Lakes basin, and, thanks to our website, everywhere else in the world.

BRINGING RIVERS TO LIFE



American Rivers
FOUNDED 1973

Urban Water-Quality Management

Rain Garden Plants

Mike Andruczyk, Extension Agent, Chesapeake

Lynnette Swanson, Extension Agent, Norfolk

Laurie Fox, Horticulture Associate, Hampton Roads Agricultural Research and Extension Center

Susan French, Extension Agent, Virginia Beach

Traci Gilland, Extension Agent, Portsmouth

A rain garden is a landscaped area specially designed to collect rainfall and storm-water runoff. The plants and soil in the rain garden clean pollutants from the water as it seeps into the ground and evaporates back into the atmosphere. For a rain garden to work, plants must be selected, installed, and maintained properly.

Plant Selection

- Choose plants tolerant of both occasional flooding as well as dry periods.
- Choose noninvasive plants that are adapted to the local environment.
- Choose a mixture of species. A good rule of thumb is one plant species for every 10 to 20 square feet. For example – a 140-square-foot garden would have 7 to 14 different plant species.
- Choose plants for vertical layering – a mix of tall-, medium-, and low-growing species.

Plant Installation

- Install plants in their proper moisture zones (see Fig. 1).
- Plant shrubs and perennials in groups of three to five of the same species. Trees can be planted in groups or individually.
- Plant taller and larger plants in the center or at one end of the garden, depending on the views.
- Plant shorter plants where they can be seen easily, around the garden edges, in front of larger plants, or underneath taller plants.

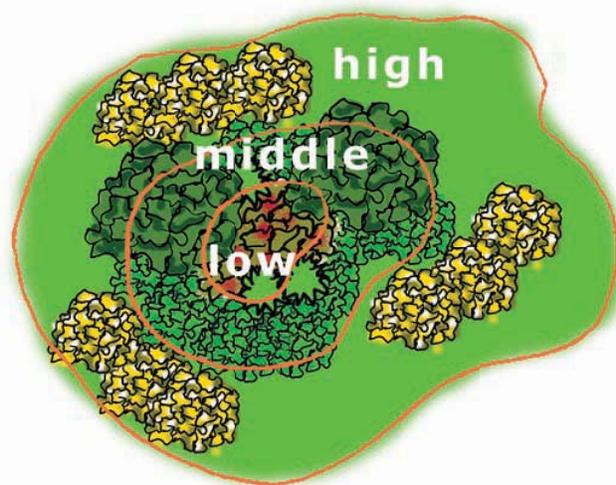
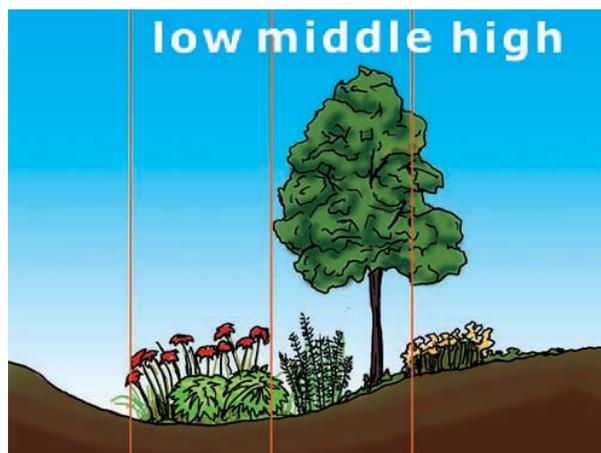


Figure 1. Rain Garden

- Space and plant perennials so that their canopies will grow together and cover the ground to minimize weeds.
- Space and plant trees and shrubs according to their mature size. For example – beautyberry shrubs, that grow to six feet wide, should be planted three feet apart.
- Planting outside and around the rain garden area helps the garden blend into the overall landscape.
- More information can be found in *Tree and Shrub Planting Guidelines*, Virginia Cooperative Extension publication 430-295.

Maintenance

- Add two to four inches of organic mulch to the entire newly planted rain garden. Do not cover the crowns of the perennials. Replenish mulch in the fall as needed.
- Avoid fine cut or lighter weight mulches as they tend to float in wet conditions.
- Prune any dead, diseased, or damaged plants as soon as the problem is noticed. More information on pruning woody plants can be found in Virginia Cooperative Extension publications 430-455 through 430-462 (see References).
- Prune the foliage of perennials when they die back for the winter and ornamental grasses before new growth begins in the spring.
- Remove or spot treat weeds as necessary.
- Water the garden during its establishment and extended dry periods. One inch of water per week is recommended.

Plant Lists

Trees, shrubs, and perennials are listed with both their common and *scientific* names. Ask at local garden centers for specific cultivars, varieties, and size at maturity.

Trees

Use trees only in rain gardens larger than 150 square feet.

| | |
|------------------------|-------------------------------------|
| Alder | <i>Alnus serrulata (glutinosa)</i> |
| Arborvitae | <i>Thuja occidentalis</i> |
| Atlantic White Cedar | <i>Chamaecyparis thyoides</i> |
| Austrian Pine | <i>Pinus nigra</i> |
| Bald Cypress | <i>Taxodium distichum</i> |
| Black Gum | <i>Nyssa sylvatica</i> |
| Carolina Silverbell | <i>Halesia tetraptera</i> |
| Common Persimmon | <i>Diospyros virginicus</i> |
| Dawn Redwood | <i>Metasequoia glyptostroboides</i> |
| Downy Serviceberry | <i>Amelanchier arborea</i> |
| Eastern Redbud | <i>Cercis canadensis</i> |
| Eastern Red Cedar | <i>Juniperus virginiana</i> |
| Green Ash | <i>Fraxinus pennsylvanica</i> |
| Hackberry | <i>Celtis occidentalis</i> |
| Hornbeam | <i>Carpinus caroliniana</i> |
| Japanese Cryptomeria | <i>Cryptomeria japonica</i> |
| Japanese Zelkova | <i>Zelkova serrata</i> |
| Katsura Tree | <i>Cercidiphyllum japonicum</i> |
| Lacebark Elm | <i>Ulmus parvifolia</i> |
| Loblolly Pine | <i>Pinus taeda</i> |
| Planetrees (Sycamores) | <i>Platanus spp.</i> |
| Red Maple | <i>Acer rubrum</i> |
| River Birch | <i>Betula nigra</i> |
| Swamp White Oak | <i>Quercus bicolor</i> |
| Sweetbay Magnolia | <i>Magnolia virginiana</i> |
| Sweetgum | <i>Liquidambar styraciflua</i> |
| Water Oak | <i>Quercus nigra</i> |
| Weeping Willow | <i>Salix babylonica/alba</i> |

Willow Oak
Witch Hazel
Yaupon Holly

Quercus phellos
Hamamelis virginiana
Ilex vomitoria

Shrubs

| | |
|-----------------------|---|
| American Beautyberry | <i>Callicarpa americana</i> |
| Anise | <i>Illicium parvifolium</i> |
| Arrowwood | <i>Viburnum dentatum</i> |
| Bottlebrush Buckeye | <i>Aesculus parviflora</i> |
| Buttonbush | <i>Cephalanthus occidentalis</i> |
| Carolina Allspice | <i>Calycanthus floridus</i> |
| Chokeberry | <i>Aronia arbutifolia</i> |
| Cranberrybushes | <i>Viburnum opulus/trilobum</i> |
| Devilwood | <i>Osmanthus americana</i> |
| Dogwoods | <i>Cornus amomum/racemosam/sericea</i> |
| Elderberry | <i>Sambucus canadensis</i> |
| False Indigo | <i>Amorpha fruticosa</i> |
| Fetterbush | <i>Leucothoe racemosa</i> |
| Groundsel Bush | <i>Baccharis halimifolia</i> |
| Highbush Blueberry | <i>Vaccinium corymbosum</i> |
| Inkberry | <i>Ilex glabra</i> |
| Leucothoes | <i>Leucothoe axillaris/fontanesiana</i> |
| Oakleaf Hydrangea | <i>Hydrangea quercifolia</i> |
| Possumhaw | <i>Ilex decidua</i> |
| Rose of Sharon | <i>Hibiscus syriacus</i> |
| Shadblow Serviceberry | <i>Amelanchier canadensis</i> |
| Spicebush | <i>Lindera benzoin</i> |
| Steeplebush | <i>Spiraea tomentosa</i> |
| Summersweet Clethra | <i>Clethra alnifolia</i> |
| Swamp Azalea | <i>Rhododendron viscosum</i> |

Swamp Rose
Virginia Sweetspire
Wax Myrtles
Willows

Winterberry

Rosa palustris
Itea virginica
Myrica cerifera/pennsylvanicum
Salix caprea/dicolor/matsudana
sachalinensis/purpurea
Ilex verticillata

Perennials

Arrowhead
Asters
Beardtongue
Beebalm
Blackeyed Susan
Blue Lobelia
Bluestar
Calla Lily
Canna Lily
Cardinal Flower
Crinum Lily
Daylilies
Gingers
Goldenrod
Hardy Begonia
Hibiscus
Ironweed
Irises

Joe-Pye Weed
Leopard Plant
Liatris
Lilyturf
Lizard Tail
Lungwort
Marsh Marigold
Monkey Flower
Obedient Plant
Pickerelweed
Plantain Lily
Primroses
Rain Lilies

Sagittaria latifolia
Aster spp.
Penstemon digitalis
Monarda didyma
Rudbeckia hirta
Lobelia siphilitica
Amsonia tabernaemontana
Zantedeschia spp.
Canna spp.
Lobelia cardinalis
Crinum spp.
Hemerocallis spp.
Hedychium spp.
Solidago flexicaulis
Begonia grandis
Hibiscus coccineus/moscheutos
Vernonia noveboracensis
Iris lousiana/pseudacorus/versicolor/virginica
Eupatorium spp.
Ligularia tussilaginea
Liatris spicata
Liriope muscari
Saururus cernuus
Pulmonaria spp.
Caltha palustris
Mimulus ringens
Physotegia virginiana
Pontederia cordata
Hosta spp.
Primula spp.
Zephyranthes spp.

Red Columbine
Siberian Bugloss
Spiderwort
Strawberry Begonia
Swamp Milkweed
Swamp Sunflower
Turtleheads
Virginia Bluebells
Wild Ginger
Windflowers

Aquilegia canadensis
Brunnera macrophylla
Tradescantia spp.
Saxifraga stolonifera
Asclepias incarnata
Helianthus angustifolius
Chelone lyonii/obliqua
Mertensia virginica
Asarum canadense
Anemone

Ferns

Christmas Fern
Cinnamon Fern
Holly Fern
Japanese Painted Fern
Lady Fern
Royal Fern
Tassel Fern
Wood Ferns

Polystichum acrostichoides
Osmunda cinnamomea
Cyrtomium falcatum
Athyrium nipponicum
Athyrium felix-femina
Osmunda regalis
Polystichum braunii
Dryopteris spp.

Grasses and Grass-like

Broom Sedge
Feather Reed Grass
Foxtail Grass
Rushes
Sedges
Sweetflag
Switchgrass

Andropogon virginicus
Calamagrostis acutiflora
Alopecurus pratensis
Juncus spp.
Carex spp.
Acorus spp.
Panicum virgatum

Groundcovers

Bugleweed
Foamflower
Green and Gold
Lilyturf
Mazus
Plumbago
St. Johnswort

Ajuga spp.
Tiarella cordifolia
Chrysogonum virginianum
Liriope spicata
Mazus reptans
Ceratostigma plumbaginoides
Hypericum calycinum

References

Rain Gardens, A Landscape Tool to Improve Water Quality; Virginia Department of Forestry Publication VDOF 000127, <http://www.dof.virginia.gov/>

Rain Gardens, Virginia Department of Forestry, <http://www.dof.virginia.gov/rfb/rain-gardens.shtml>

Backyard Rain Gardens, North Carolina Cooperative Extension, <http://www.bae.ncsu.edu/topic/raingarden/>

Rain Gardens, University of Wisconsin-Extension, <http://clean-water.uwex.edu/pubs/raingarden/index.html>

Rain Gardens, Rainscapes, <http://209.142.214.237/rain-scapes/garden.htm>

Rain Gardens of West Michigan, <http://www.raingardens.org/Index.php>

Tree and Shrub Planting Guidelines, Virginia Cooperative Extension publication 430-295, <http://www.ext.vt.edu/pubs/trees/430-295/430-295.html>

A Guide to Successful Pruning: Pruning Basics and Tools, Virginia Cooperative Extension publication 430-455, <http://www.ext.vt.edu/pubs/nursery/430-455/430-455.html>

A Guide to Successful Pruning, Pruning Deciduous Trees, Virginia Cooperative Extension publication 430-456, <http://www.ext.vt.edu/pubs/nursery/430-456/430-456.html>

A Guide to Successful Pruning, Pruning Evergreen Trees, Virginia Cooperative Extension publication 430-457, <http://www.ext.vt.edu/pubs/nursery/430-457/430-457.html>

A Guide to Successful Pruning: Stop Topping Trees!, Virginia Cooperative Extension publication 430-458, <http://www.ext.vt.edu/pubs/nursery/430-458/430-458.html>

A Guide to Successful Pruning, Pruning Shrubs, Virginia Cooperative Extension publication 430-459, <http://www.ext.vt.edu/pubs/nursery/430-459/430-459.html>

A Guide to Successful Pruning, Deciduous Tree Pruning Calendar, Virginia Cooperative Extension publication 430-460, <http://www.ext.vt.edu/pubs/nursery/430-460/430-460.html>

A Guide to Successful Pruning, Evergreen Tree Pruning Calendar, Virginia Cooperative Extension publication 430-461, <http://www.ext.vt.edu/pubs/nursery/430-461/430-461.html>

A Guide to Successful Pruning, Shrub Pruning Calendar, Virginia Cooperative Extension publication 430-462, <http://www.ext.vt.edu/pubs/nursery/430-462/430-462.html>

Editorial Contributors

Barry Fox, Extension Specialist, Virginia State University

Adria Bordas, Virginia Cooperative Extension Agent Fairfax County

Karen Carter, Virginia Cooperative Extension Agent Henrico County

JoAnne Gordon, Horticulturist, City of Norfolk



Example photo of a bio-retention swale.
Photo taken from www.wsud.org



Example photo of a bio-retention parking lot swale.
Photo taken from www.waterresearch.com

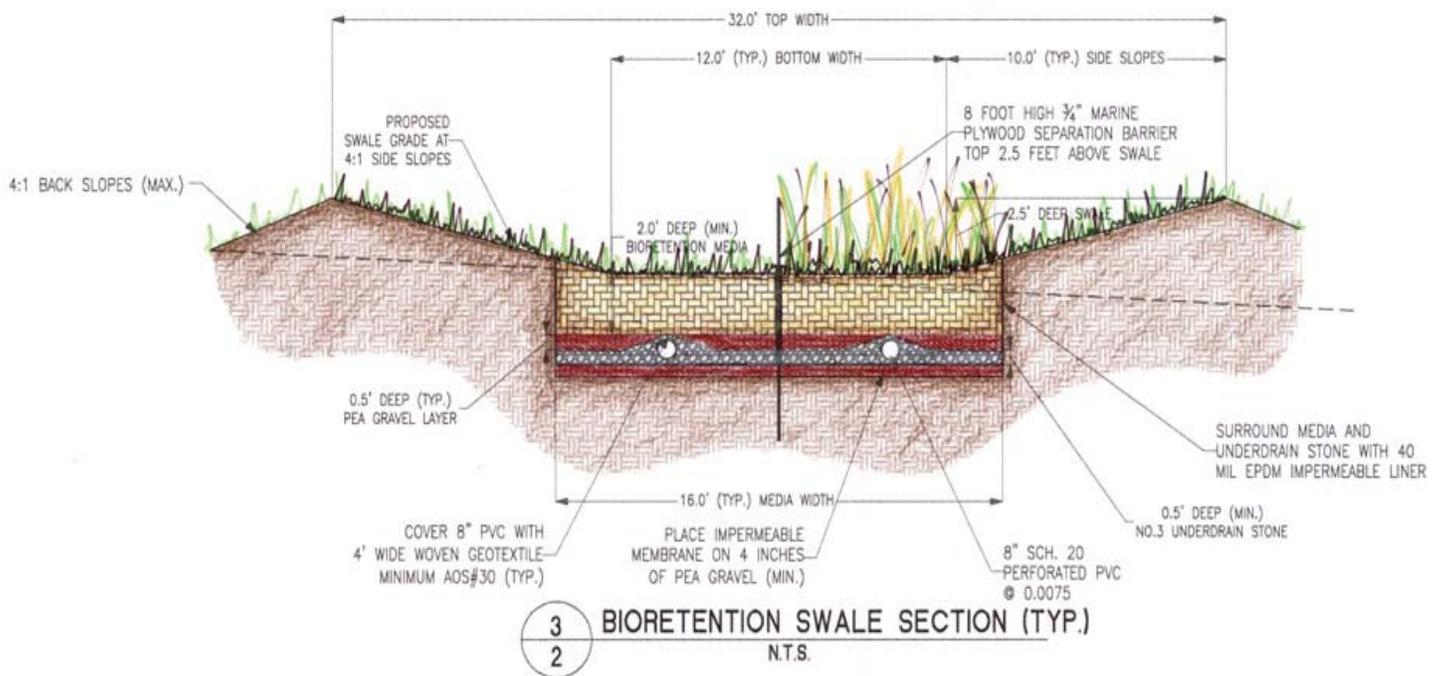


Photo taken from www.esc.rutgers.edu

Appendix B : Porous Pavers/Pervious Paving

As the Town of Mineral implements the changes proposed in the Final Conceptual Master Plan, it should consider using porous and pervious paving surfaces as much as possible to assist with on-site storm water management.

Porous pavers should be considered as a paving material option for parking spaces. There are a variety of different porous paver products. Depending on the location within the park, grass pavers or gravel pavers may be more appropriate. Grass pavers would be a good choice in areas that will not be covered by overhead tree canopy that would shade out the sun and inhibit growth of the grass. Gravel pavers are a better option in shady areas.

Pervious paving should be considered for trails and roadways. Should the Town choose to pave the park's small road system, porous asphalt or porous concrete would be a good alternative material to consider.

Some additional information on pervious paving can be found on pages 46 through 48.



Example of grass pavers in a parking lot in a Blacksburg park (winter shot).



Porous pavers are used in the parking spaces while asphalt is used for the roadway surfacing.

Pervious Paving Recommendation | Cast in place allowing water to pass through

Pervious concrete is made from carefully controlled amounts of water and cementitious materials used to create a paste that forms a thick coating around aggregate particles. Unlike conventional concrete, the mixture contains little or no sand, creating a substantial void content – between 15% to 25%.

Using sufficient paste to coat and bind the aggregate particles together creates a system of highly permeable, interconnected voids which drain quickly. Both the low mortar content and the high porosity reduce strength compared to conventional concrete, but sufficient strength is readily achieved for many applications.

Pervious concrete allows 3 to 8 gallons of water per minute to pass through each square foot of the material. By allowing rainwater to seep into the ground, pervious concrete can be instrumental in recharging groundwater and reducing stormwater runoff. This capability can reduce the need for retention ponds, swales, and other stormwater management devices. Pervious pavement integrates hardscape surfaces with stormwater management.

Uses:

Applications for pervious concrete include:

Hardscape

- Low-volume pavements
- Residential roads, alleys, and driveways
- Low-water crossings
- Parking lots
- Sidewalks and pathways
- Patios
- Tennis courts
- Swimming pool decks
- Pavement edge drains

Floors

Foundations/floors for greenhouses, fish hatcheries, aquatic amusement centers, and zoos

Walls

- Load bearing and other walls
- Sound barriers

Other

- Subbase for conventional concrete pavement
- Slope stabilization
- Artificial reefs
- Well linings
- Hydraulic structures
- Tree grates in sidewalks
- Groins and seawalls



Why:

Use of pervious concrete is among the Best Management Practices (BMP) recommended by the EPA and other agencies for the management of stormwater runoff on a regional and local basis. By eliminating the need for retention ponds, swales, and other stormwater devices, pervious concrete can lower overall project costs on a first-cost basis, and makes more efficient use of the land.

Sustainability:

Pervious concrete has many environmental benefits. See associated sustainability solutions and technical briefs (right) for more detail.

Stormwater Management. By allowing water to soak through and infiltrate, pervious paving reduces stormwater flow and pollutant loads. Can contribute to LEED Credit 6.

Minimize Site Disturbance. By integrating paving and drainage, less site area may need to be used to manage stormwater, allowing a more compact site development footprint. May contribute to LEED Credit SS 5.

Local. Materials are usually extracted and manufactured locally. May contribute to LEED Credit M 5.

Recycled content. Fly ash, slag cement, or silica fume can substitute partially for cement, and recycled aggregates can replace newly mined gravel. Recycled content can contribute to LEED Credit M 4.

Cool. The voids reduce mass reducing the heat build up associated with heat islands. Lighter colored cements can increase reflectivity. Not specifically approved for achieving LEED Credit SS 7.

Considerations:

The properties of pervious concrete vary with design and depend on the materials used and the compaction procedures. General guidelines for specifications are provided below.



Permeability. Typical flow rates for water through pervious concrete are 3 to 8 gallons per sq foot per minute, but can be double that amount if desired.

Compressive Strength. Pervious concretes can develop compressive strengths in the range of 500 to 4000 psi – suitable for a wide range of applications.

Flexural Strength. Flexural strength of pervious concrete ranges between 150 and 550 psi.

Shrinkage. Drying shrinkage of pervious concrete is faster but much less than that experienced with conventional concrete. Many pervious concretes are made without control joints and are allowed to crack randomly.

Freeze-Thaw Resistance. Freeze-thaw resistance depends on the saturation level of the voids in the concrete at the time of freezing. In the field, it appears that the rapid draining characteristics of pervious concrete prevent saturation from occurring. Where substantial moisture and freeze-thaw conditions are anticipated, pervious concrete should be placed on a 6 to 18-in.-thick layer of drainable rock base such as 1-in. crushed stone.

Abrasion resistance. Because of the rougher surface texture and open structure of pervious concrete, abrasion and raveling of aggregate particles can be a problem, particularly where snowplows are used to clear pavements. Surface raveling in new pervious concrete can occur when rocks loosely bound to the surface pop out under traffic loads. This raveling is considerably reduced after the first few weeks.



Photo of porous pavement.
 Photo taken from www.concretenetwork.com

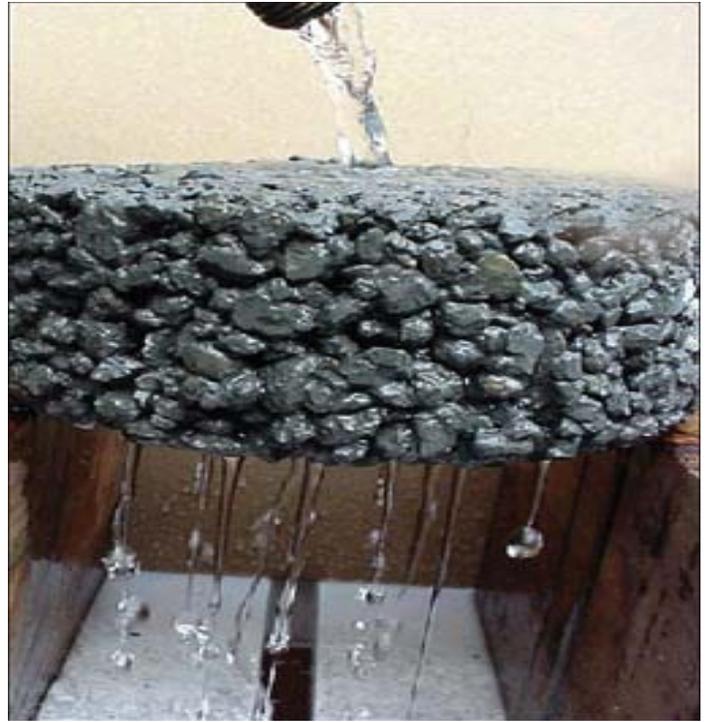
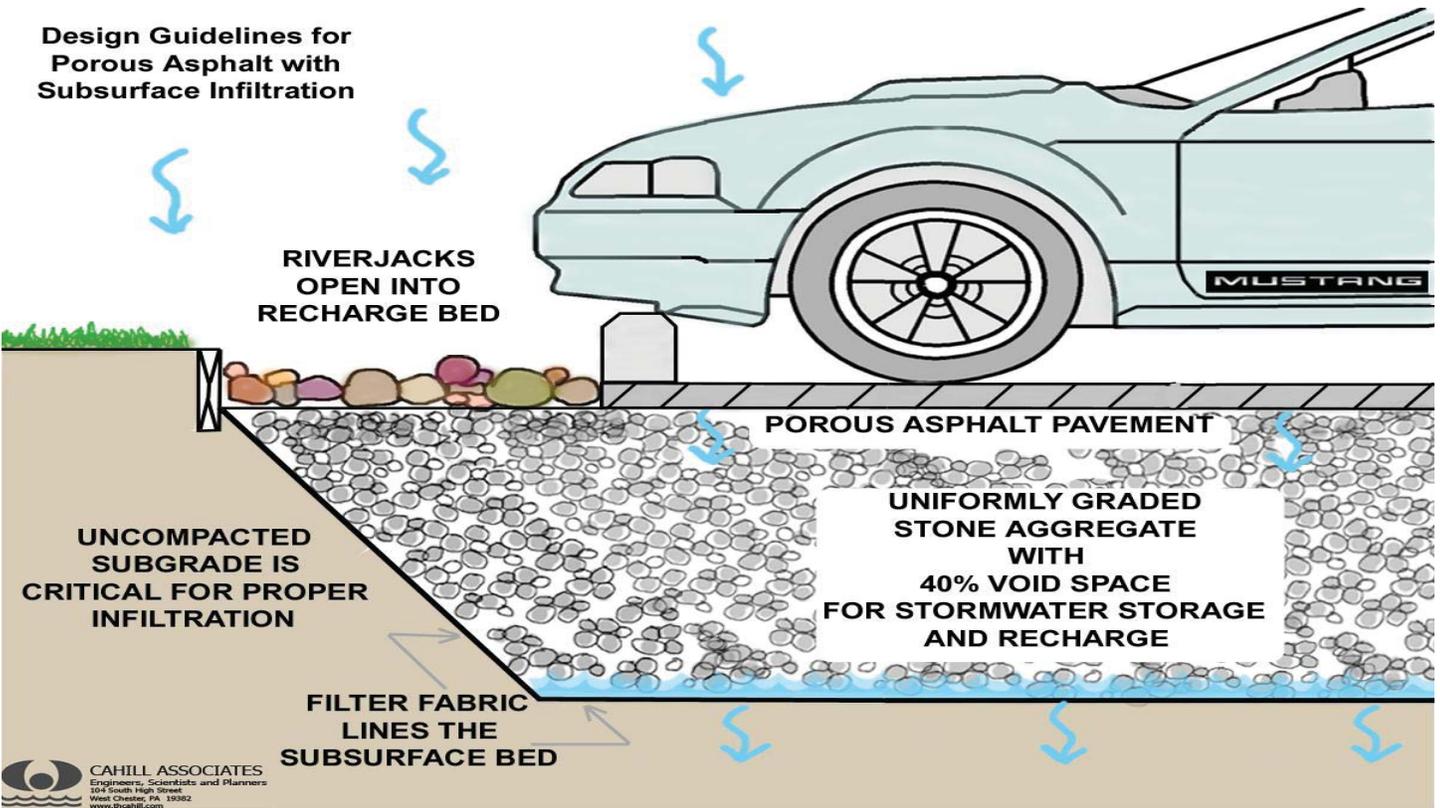


Photo of porous pavement
 Photo taken from www.centralconcrete.com



Section drawing of porous pavement parking space.
 Photo taken from www.mapc.com

Appendix C : Planting Recommendations

A variety of plants will work well for the site. When selecting plants, strive to choose native species and to selective a diversity of plant and tree types to avoid monoculture issues. Utilize local expertise, such as Area Forester David Stone, for reviewing plant choices before purchase. When looking for wetland plants, Ernest Conservation Seed offers a variety of mixes (<http://www.ernstseed.com/>).

Canopy Trees:

Acer rubrum - (red maple)



(www.raveplants.com)

Betula nigra - (river birch)



(www.z.about.com)

Acer saccharinum - (silver maple)



(www.northshorewx.com)

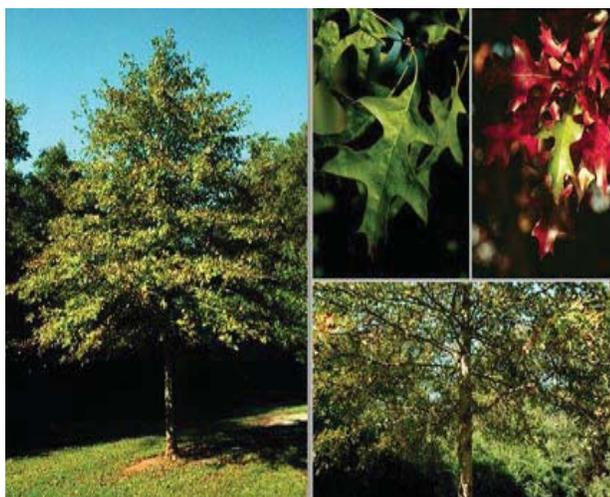
Fraxinus americana - (white ash)



(www.jvh-nurseries.com)

Canopy Trees :

Quercus palustris - (pin oak)



(www.tva.gov)

Quercus phellos - (willow oak)



(www.tva.gov)

Shrubs : (Living fence & Playing field hedge)

Berberis thunbergii - (red barberry)



(www.bashamlandscape.com)

Juniperus chinensis - (Chinese juniper)



(www.washington.edu)

Shrubs : (Additional landscaping/Rain Garden)

Clethra alnifolia - (summersweet clethra)



(www.gardening.about.com)

Ilex verticillata - (winterberry)



(www.griffithpropagationnursery.com)

Hydrangea arborescens - (wild hydrangea)



(www.mobot.com)

Itea virginica 'Henry's Garnet' - (Virginia sweetspire)



(www.arboretum.sfasu.edu)

Riparian Plants :

Carex elata ' Aurea ' - (Bowles' golden sedge)



(www.mobot.com)

Chelone glabra - (white turtle head)



(www.mobot.com)

Carex nigra ' Variegata ' - (black sedge)



(www.mobot.com)

Oenanthe javanica - (water celery)



(www.victoria-adventure.org)

Riparian Plants :

Peltandra japonica - (butterbur)



(www.mobot.com)

Thelypteris palustris - (marsh fern)



(www.dkimages.com.com)

Appendix D : Site Amenities

Barberry Hedge Row:



(www.fencewholesale.com)

A Red Barberry hedge can be implemented along the Walton Park property line to act as a living fence. The Barberry plant is a dense, rounded, thorny shrub species with red leaves and bright red berries. It is commonly used as a hedge or barrier in the landscape to contain or restrict movement. The plant is considered a small shrub with a varying height of 4 - 5 ft. and has moderate water requirements and moderately tolerant to salt.

Split-Rail Fencing with Stone Columns:



(www.lovedayfence.net)

This is an example photo of a split-rail fencing system with stone veneered columns. It was discussed during the final presentation that a fence be placed along the eastern property line or along the main entrance of the park.

Entry Gate:



(www.expertfencenwa.com)

Photo example of proposed steel gate and stone veneered columns at Walton Parks main entrance. This entry gate create a aesthetically pleasing entry way to the park while limiting vehicular access during closed hours.

Signage:



(www.empo.us.orienteering.org)

Photo example of proposed signage at park entrance along Louisa Avenue. A stone veneered wall will provide a base for the appropriate signage.

Lighting:

Solar Lighting:



(www.sunseap.com)

Photo example of outdoor solar lamps. Solar lamps provide powerful light at the most economical cost and will eliminate any burying of wire on site. These lights have a typical runtime of 12 hours and have a energy storage capacity for up to 4 days.

Low Voltage Lighting:



(www.illuminatorwholesaler.com)

Photo example of a low voltage park lamp. Low voltage lighting produces the same amount of lighting as regular lighting systems but uses less electricity. These lights can produce two - and a half times as much light as produced by the line-voltage incandescent lamps.

Low Voltage Lighting Offers:

- Saves energy
- Saves on expenses
- Provide greater safety protection
- Reduction of wastage

Soccer Field Lighting:



(www.solarpowergetics.com)

Photo example of soccer field lighting. These lamps have been recommended to replace the existing lamps and will provide light for night time events and youth soccer games. The lights shown in the photograph can both be powered by solar energy or line fed electricity.

Amphitheater:



(www.lifeinmayberry.com)

Photo example of the proposed amphitheater. The seating venue will be constructed of stone veneered terraced walls to match the stone used in the entry gate and signage.

Shelters:

Pavilions:



(www.drapers.ut.us)

Photo example of proposed pavilion with attached bathroom. The structure will be simply constructed with stone veneered support columns.

Bathhouse:



(www.dcr.virginia.gov)

Photo example of bathhouse consisting of both mens' and womens' showering rooms. This structure will be used in Walton Park during large events, such as the annual Mineral Bluegrass Festival.

Vault Restrooms:

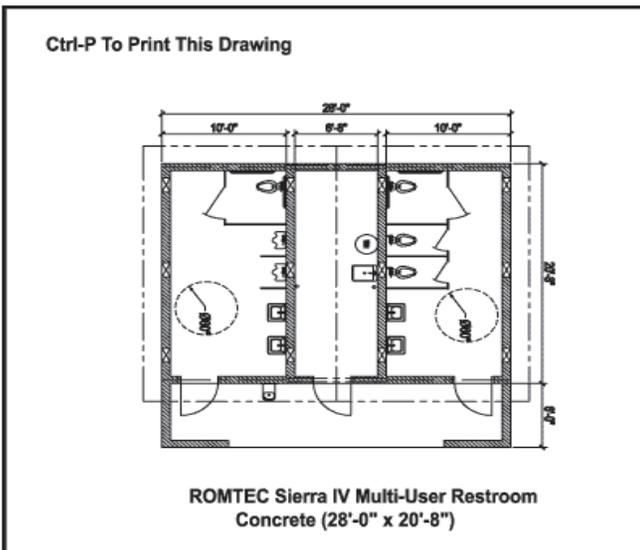


(www.romtec.com)

Waterless vault toilet systems provide environmental and economical solutions for public facilities such as parks. These systems use the U.S. Forest Service's design concept of "S.S.T." (sweet smelling toilet) vault toilet technology. Vault chambers are sloped, vented and sealed from the environment providing environmental security. Buildings can be constructed of pre-cast concrete, framed or steel. Structure must be compliant with A.D.A (Americans with Disabilities Act) design codes.

(www.restroomsolutions.com)

Vault Restroom Floorplan:



(www.romtec.com)

Vault Chambers:



(www.restroomsolutions.com)

Bridges:

Low Concrete Bridge:



(www.blackbearnc.com)

Photo example of concrete bridge veneered with stone. The bridge on-site will cross the existing stream crossing through Walton Park.

Wooden Footbridge:



(www.forgotten-ny.com)

Example of wooden footbridge that will be replace the existing structure behind the stage.

100% Recycled Plastic Bench



Information taken from <http://www.parkequipmentpro.com>

Park Equipment Pro's 100% recycled plastic bench features a black recycled plastic frame and stainless steel fasteners. The 2"x4" slats are 100% recycled plastic. One can choose between a 6 foot (185 lb.) and 8 foot (205 lb.) model.

Economy Park Grill



Information taken from <http://www.parkequipmentpro.com>

This grill has a 300 square inch cooking surface and dimensions of 20"W x 15" D x 10" H. Made of 3/16" steel with a continuous weld type construction, this is Park Equipment Pro's most vandal resistant pedestal grill. Total weight is 29lbs. The grill can be shipped via UPS.

Appendix E : Tree Inventory Species List

| TREE_CODE | SCIENTIFIC | COMMON |
|-----------|------------------------------|----------------------|
| ACspp | Acer spp. | Maple spp. |
| CECA | Cercis canadensis | Eastern redbud |
| COKO | Cornus kousa | Kousa dogwood |
| PRspp | Prunus spp. | Cherry spp. |
| SAspp | Salix spp. | Willow spp. |
| PIST | Pinus strobus | Eastern white pine |
| ACPA | Acer palmatum | Japanese maple |
| ACRU | Acer rubrum | Red maple |
| ACSAC | Acer saccharum | Sugar maple |
| BENI | Betula nigra | River birch |
| COspp | Cornus spp. | Dogwood spp. |
| MASO | Magnolia x soulangiana | Saucer magnolia |
| PIAB | Picea abies | Norway spruce |
| QURU | Quercus rubra | Northern red oak |
| UNKN | Unknown | Unknown |
| MAspp | Malus spp. | Crabapple spp. |
| QUAL | Quercus alba | White oak |
| xCULE | x Cupressocyparis leylandii | Leyland cypress |
| ACPL | Acer platanoides | Norway maple |
| BEspp | Betula spp. | Birch spp. |
| COCO | Cotinus coggygria | European smoketree |
| MAGR | Magnolia grandiflora | Southern magnolia |
| PAPE | Parrotia persica | Persian ironwood |
| PYspp | Pyrus spp. | Pear spp. |
| ABFR | Abies fraseri | Fraser fir |
| ACNE | Acer negundo | Boxelder |
| COFL | Cornus florida | Flowering dogwood |
| JUspp | Juniperus spp. | Juniper spp. |
| PIspp | Picea spp. | Spruce spp. |
| PRSUpe | Prunus subhirtella 'Pendula' | Weeping higan cherry |
| PYCA | Pyrus calleryana | Callery pear |
| QUspp | Quercus spp. | Oak spp. |
| THOC | Thuja occidentalis | Northern white cedar |
| ACSA | Acer saccharinum | Silver maple |
| ULAM | Ulmus americana | American elm |

| | | |
|-------|-----------------------------|----------------|
| GLTR | <i>Gleditsia tricanthos</i> | Honeylocust |
| QUTE | <i>Quercus texana</i> | Nuttall oak |
| OXAR | <i>Oxydendrum arboreum</i> | Sourwood |
| QUPR | <i>Quercus prinus</i> | Chestnut oak |
| SABA | <i>Salix babylonica</i> | Weeping willow |
| ILspp | <i>Ilex</i> spp. | Holly spp. |

Appendix F : List of Proposed Elements

A matrix of proposed site elements, their quantity, dimensions, and material suggestions can be found on 11x17 pullouts on the following two pages. This information can be used to assist the Town of Mineral in developing cost estimates for implementing aspects of the conceptual master plan.

List of Proposed Elements

| | Item | Quantity | Dimension | Linear ft / Square ft. | Material |
|------------------|----------------------|---|--|---|--|
| Amenities | Benches | 10 | 8' L at 205 lbs with 2" x 4" 100% recycled plastic slats | N/A | 100% recycled plastic bench featuring a black recycled frame and stainless fasteners |
| | Grills | 8 | 20" w x 15" D x 10" H with a total weight of 29 lbs | N/A | 3/16" steel with a continuous weld type construction |
| Paving | Parking | 3 designated parking lots consisting of 41 parking spaces | Spaces = 10 W x 20 L | Porous Paving = 1800 sq ft Paving = 2425 sq ft | Porous Pavement Pavement |
| | Pavement | N/A | 2320' L x 15' W | 17,400 linear ft | Pavement |
| Plantings | Entry Allee | 10 | 40' to 60' H x 25' to 45' W | 400 linear ft | Acer rubrum |
| | Entry Gate Plantings | To be determined by client or qualified landscape consultant. | N/A | N/A | Refer to Appendix C for recommended plant listing or qualified landscape consultant |
| | Living Fence | To be determined by client or qualified landscape consultant. | 3' to 6' W | 1435 linear ft | Berberis thunbergii |
| | Overstory Trees | To be determined by client or qualified landscape consultant. | N/A | N/A | Refer to Appendix C for recommended plant listing or qualified landscape consultant |
| | Rain Garden | 1 | N/A | 560 linear ft of edging | Refer to Appendix C for recommended plant listing or qualified landscape consultant |

| Item | Quantity | Dimension | Linear ft / Square ft. | Material |
|-----------------------------|--|--|-----------------------------|---|
| RV / Soccer Field Screening | To be determined by client or qualified landscape consultant. | 4' to 6' H x 6' to 8' W | 500 linear ft | Juniperus Chinensis |
| Stream Bank Restoration | 2 banked edges | N/A | 660 linear ft | Refer to Appendix C for recommended plant listing or qualified landscape consultant |
| Trails | | | | |
| Walk / Run Loop | N/A | 2900' L x 6' W | 2900 linear ft | Finely crushed stone |
| Structures | | | | |
| Bathouse | 1 | 30' x 30' showering facility | 450 sq ft | To be determined by client. Refer to Appendix D for photo example. |
| Bridge | 1 | 15' W x 20' L | 150 sq ft | |
| Entry Gate | 2 swing gates | 6' H x 8' W | N/A | Two stone veneered columns with dual black steel swing gates. Refer to Appendix D for photo example. |
| Entry Signage | 2 | To be determined by client. | N/A | Wooden Sign depicting Walton Park logo resting on stone veneered base. Refer to Appendix D for example. |
| Footbridge | 3 | 2 @ 35' L x 10' W 1 @ 50' L x 10' W | 175 sq ft sq ft | 250 Wooden footbridges with railings. Refer to Appendix D for photo example. |
| Fence | Material quantity to be determined by client or licensed contractor. | 800' L x 4' H with 2' x 2' columns | 800 linear ft. | Wooden split rail with stone veneered columns. Refer to Appendix D for photo example. |
| Pavilion | 2 | 100' L x 40' W with restroom 30' W with storage | 80' L x 2000 sq ft sq ft | 1200 To be determined by client. Refer to Appendix D for photo example. |
| Vault Restroom | 1 | 30' x 30' restroom facility | 450 sq ft | To be determined by client. Refer to Appendix D for photo example. |

Appendix G : Festival Survey and Findings

The CDAC design team prepared a brief survey to be distributed to Walton Park's annual bluegrass festival. A copy of the survey instrument, at a reduced scale, can be found below. A summary of findings can be found on the following page.

The Community Design Assistance Center (CDAC), an outreach center in the College of Architecture and Urban Studies at Virginia Tech, is working with the Town of Mineral and its citizens to create a conceptual master plan to improve Walton Park. Please take a few minutes to complete and let us know any ideas you may have on how to improve the park!

1. Where are you from?

2. Which day(s) are you attending the Mineral Blue Grass Festival (please circle ALL that apply):

Thursday 7/19

Friday 7/20

Saturday 7/21

3. Are you staying overnight? (please circle one)

Yes

No

4. If yes, where are you staying?

5. Would you like to see a pedestrian connection made from Walton Park to downtown Mineral?

6. Are there any changes or additions to Walton Park that would make your time at the festival more enjoyable?

7. Do you have any other suggestions to increase recreational opportunities at Walton Park or to improve the park as a venue for other concert events?

Thank you for your feedback!

If you have any questions about this project or would like to share more input, please contact Kim Steika, CDAC Landscape Architecture Project Coordinator, at 540-231-5644 or via email at ksteika@vt.edu

A list of open-ended survey responses are as follows:

Add showers
Add bathrooms
More picnic tables
No smoking/designated smoking areas
More campsites for motorhomes
More level space to take 50 amp service
Better signage to park
More (rugged) camping spaces (not by generators)
Don't cut any trees
Upgrade electric hook ups
Add a children's play area
More concessions
Tent moved where you can see the whole stage
Lots for larger motorhomes
A daily shuttle bus to downtown
Limit number of chairs per person
Shuttle bus from Christopher Run camp ground to park
Better food/more choices
Lower food prices
More festivals
More places to wash your hands
More street lights in camp area
Source of cool drinking water
Provide "home cooked" food in support of specified organizations
More light in parking area
No high back chairs in performance area
more electric and water hook ups
ATM machine
More shade in center
Don't put campers too close to each other - what is the fire code?
More shade in front of the stage
Water fountain
Get an ice cream vendor
Closer parking for handicapped
Handicapped bathrooms
Sewer hook-ups
Have a stage or place to dance
Spray for bugs, ticks and poison ivy
Please enforce chair policy (high back chairs should be in back)

Your line up was superb
We would like to see the Mark Timpelton Band
Don't move chairs; if there is not enough room for your party, move elsewhere
Would like there to be a golf cart track alongside pedestrian connection to dt
Push concert area line out and mark edge
Provide better vending space farther from concert
Put artists on top of hill b/h seats
All generators off between 11pm at 7am
Great facility - just needs improvements
More monitoring of crowd during concerts
Don't do anything to disturb its natural beauty
It's a beautiful tree covered park
Activities
Announcer should inform the audience of rules and regulations...