

A paved path winds through a lush green park. The path is dark grey and curves from the bottom left towards the center. On either side of the path are large, mature trees with thick trunks and dense green foliage. The ground is covered in vibrant green grass. The overall scene is bright and sunny, with dappled light filtering through the leaves.

Purcell Park

Harrisonburg, Virginia

Master Plan

August 2020

Purcell Park Master Plan

August 2020
Harrisonburg, Virginia



ACKNOWLEDGEMENTS

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BACKGROUND AND CONTEXT



INTRODUCTION

Purcell Park is a 57 acre parcel within the City of Harrisonburg, Virginia. It contains a robust trail system, recreational fields, three picnic pavilions, and a well-known playground. It is bisected by Blacks Run, as well as other tributary streams, and holds a freshwater pond stocked for fishing.

The Purcell Park Master Plan was undertaken by the City of Harrisonburg's Parks and Recreation Department in response to playground safety concerns and recurring flooding issues from waterways through the park. A thorough assessment of the underlying site conditions and community desires, and the feasibility of various options studied, was needed to develop a plan that would serve the City in the near future and provide a blueprint for future development.

This document describes the master plan process and resulting recommendation.

METHODOLOGY

Building the Three-Legged Stool

Community Engagement: What the Community Desires

Community input from a representative portion of the community is imperative to ensuring equity and the success of recommendations. During the development of this plan, our team has endeavored to engage stakeholders from all over the City in a variety of ways, including four focus groups with over 110 participants, a staff focus group, seven stakeholder interviews, and on-site workshops. Outreach to local elementary schools and children's programs was undertaken by City staff, garnering input from children throughout the City. The feedback was used to design a community-wide survey, resulting in over a thousand responses with a broad range of comments. Numbers were sufficient to allow the results to be weighted in a statistically-valid manner.

Site Analysis: What Can the Park Site Support

Our team's methodology for assessing the site's natural and cultural resources used a combination of desktop analysis and targeted onsite field evaluation in order to study and confirm existing conditions within the park. Site boundaries, easements, rights of way, structures and topography were studied. The team evaluated on-site amenities with respect to safety, location suitability, potential obsolescence and general condition. Records pertaining to soils, habitats and other natural resources were compiled and documented. Hydrology models were studied and assessed to identify critical hydraulic constraints along Blacks Run exacerbating the flood inundation limits.

Demographics and Policy Analysis: Policy and Planning Goals and Objectives

Purcell Park is one of the oldest and most centrally located parks in the City and it is important that the latest Master Planning efforts are pragmatic and well informed not only by community desires and site constraints, but also from demographic, policy and budgetary perspectives. The new Master Plan for this facility incorporated recommendations of the 2013 'Comprehensive Parks and Recreation Master Plan Update', 2017 'Bicycle and Pedestrian Plan,' the 2018 adopted 'Stormwater Improvement Plan' and the City's current 'Capital Improvement Program and Plan.'

Programming

The planning team has created a recommended program of facilities or activities and design themes for the Purcell Park including the playground. We have drawn upon the findings of the initial public meetings and focus group meetings as well as the site analysis. Together the design team and the City have agreed on a program of recommended activities that the park should contain.

Testing Alternatives

Based on the community's input and the investigation of the site and its environmental, cultural and engineering components, our design team has developed differing Master Plan options that meet the overall vision of the City. In these options the location, orientation and arrangement of facilities such as children's play area, sports facilities, parking were considered. We also considered stormwater management strategies, facility standards, extension and placement of utilities, vehicular and pedestrian access, traffic generation, parking, signage and landscaping.

Publishing the Plan

Based on the comments received on the Conceptual Master Plan a Final Master Plan was developed. A stormwater management plan for the Master Plan full build-out is integral to the plan. With an understanding of the phasing of construction for the Master Plan, the team has identified which stormwater improvements should be installed with each phase.

A phasing strategy was developed based on the city's goals, available funds, grant opportunities, infrastructural requirements, and in accord with the community's desires. Cost of construction, maintenance and operations are all important aspects of this Master Plan and were an integral part of the design process to develop a Master Plan that is implementable.

The ultimate goal is a plan that serves the community now and in the future, is feasible, practical, ecologically beneficial, and brings delight to its visitors, improving a local attraction and creating a regional destination.

SITE HISTORY



City of Harrisonburg
Source: Google Maps

The City of Harrisonburg

Founded in 1779 and incorporated in 1916, Harrisonburg is an independent city and seat of Rockingham County. Located along I-81 in the heart of the beautiful Shenandoah Valley, the city is also known as “The Friendly City” since 1930. It is proud of having the 1st recognized Arts and Cultural and Culinary Districts in Virginia. Through the work of groups like Harrisonburg Downtown Renaissance and with the help of the city government, Harrisonburg is now a Virginia Main Street Community. The City also has a National Historic District and a State Historic District.

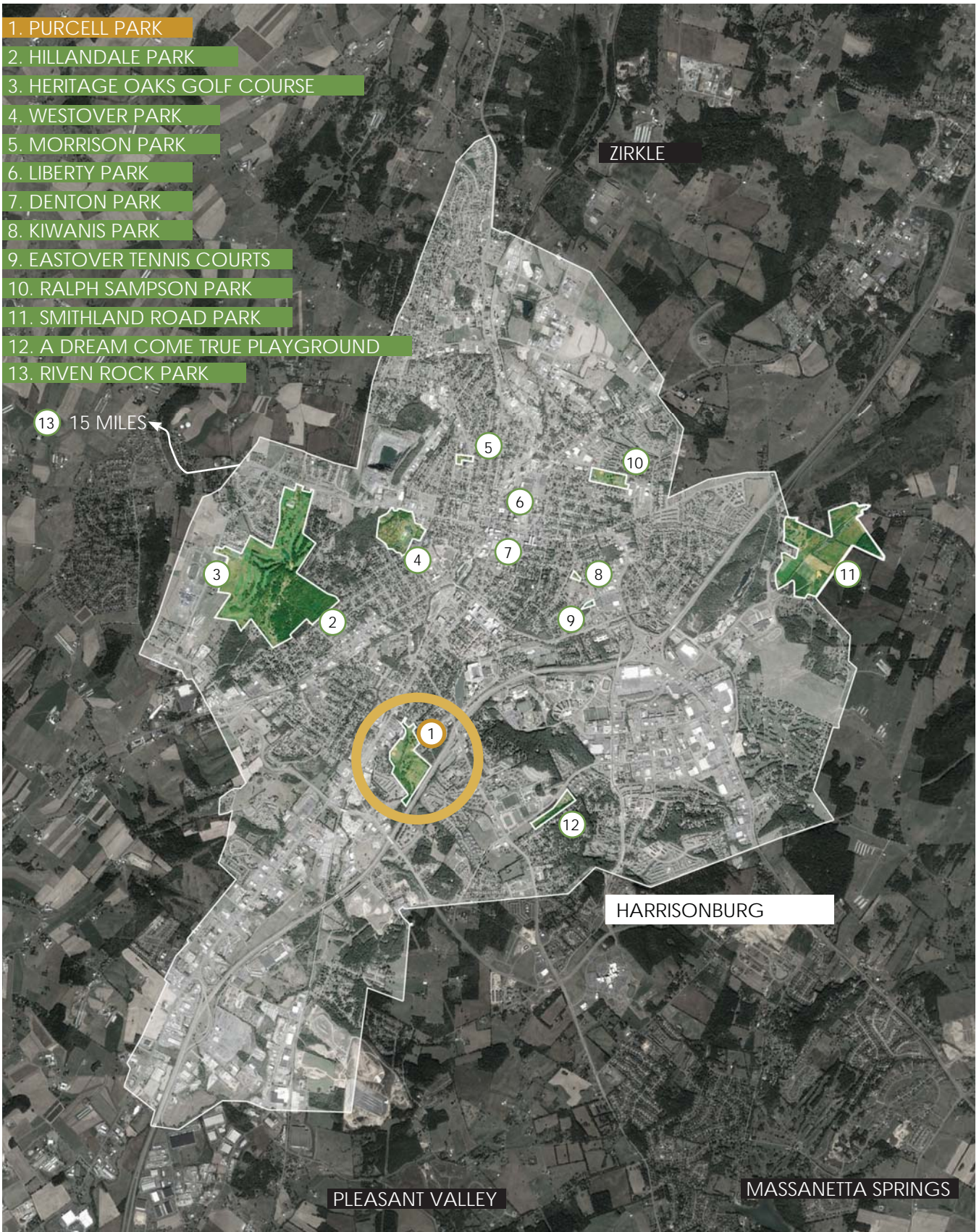
In addition to its historic roots the city is home to major institutions such as James Madison University and Eastern Mennonite University, with a total student population of approximately 22,870. The city with its 17.6 square miles area and population of 54,689 is the fastest growing city in the state of Virginia according to 2018 USA Today rankings. Harrisonburg was recently recognized as one of the top 10 best places for millennials to move to in the United States. According to Reviews.Org Harrisonburg offers a variety of

outdoor activities, strolls to the local breweries and restaurants, as well as ample opportunities to experience your artistic and creative side.

The Harrisonburg Parks and Recreation Department, established in 1954, manages 22 parks and facilities, has 105 full time, part time and seasonal staff, and has an operating budget of \$6.02 million. Its mission is to enhance the quality of life and meet the needs of the community by providing comprehensive leisure service opportunities. The department’s mission is also to develop and maintain a safe system of open spaces and public facilities for use and enjoyment by the community. The most recent comprehensive Master Plan was completed in 2003 and updated in 2013. The Department recently completed a ‘Strategic Plan’ to develop goals, objectives and strategies that align with the Vision, Mission and Values of the City. In addition, the City completed an update to the ‘City Comprehensive Plan’, 2017 ‘Bicycle and Pedestrian Plan’ and 2013-2018 ‘MS4 Program Plan Update’.

HARRISONBURG PARK SYSTEM

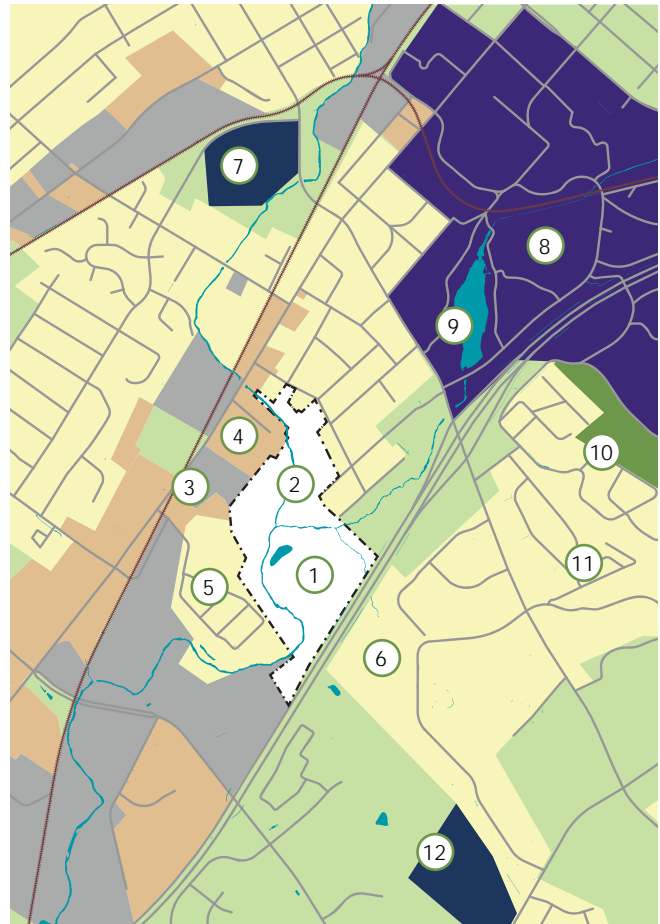
- 1. PURCELL PARK
- 2. HILLANDALE PARK
- 3. HERITAGE OAKS GOLF COURSE
- 4. WESTOVER PARK
- 5. MORRISON PARK
- 6. LIBERTY PARK
- 7. DENTON PARK
- 8. KIWANIS PARK
- 9. EASTOVER TENNIS COURTS
- 10. RALPH SAMPSON PARK
- 11. SMITHLAND ROAD PARK
- 12. A DREAM COME TRUE PLAYGROUND
- 13. RIVEN ROCK PARK



LAND USE SURROUNDING PURCELL PARK

- RESIDENTIAL
- RESIDENTIAL
- BUSINESS
- INDUSTRIAL
- RECREATION
- SCHOOL / INSTITUTIONAL OVERLAY

- ① Purcell Park
- ② Blacks Run
- ③ Recycling Management
- ④ Funky's Skate Center
- ⑤ Pheasant Run
- ⑥ Pheasant Acres
- ⑦ Keister Elementary School
- ⑧ James Madison University
- ⑨ Newman Lake
- ⑩ Edith J Carrier Arboretum
- ⑪ Forest Hills
- ⑫ Stone Spring Elementary School



Purcell Park is one of the city's largest parks, at a regional park size yet located within a neighborhood context, in proximity to downtown and James Madison University.

It is bordered by Interstate 81 on the east side, which presents a strong barrier to access and noise from vehicular traffic, and separates the park from residential communities to the east.

Residential communities lie to the north and south, housing both longstanding families and university students. Trails through the park are frequently used by residents going to and from James Madison University.

Business and industrial uses separate the west side of the park from South Main Street, an arterial leading to downtown. Local bus transit stops are

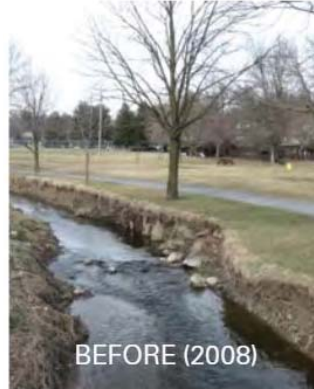
located along South Main Street, providing the closest public transportation access to the park. There are a variety of adjacent businesses, some compatible with the park, such as a bike shop, and some not, such as a metals recycling center.

The park is bisected by Blacks Run, a tributary of the North River which eventually joins the South Fork of the Shenandoah River. Other unnamed tributaries feed into Blacks Run in the park, creating a nexus of waterways.

The topography of the area is hilly, with wide areas in the park comprising relatively flat floodplains. The park area between Interstate 81 and the Bluestone Trail is continuous hillside. The western edge of the park between the ballfields and the property line rises up sharply to the business and industrial uses.

LOCAL CONTEXT





Blacks Run, Purcell Park, Before and After Riparian Restoration



Purcell Park

The 57-acre Purcell Park is one of the oldest parks in the city. Purcell Park has a variety of recreational activities including three softball/baseball fields, four tennis courts, a basketball court, a playground, three picnic shelters, restrooms, a fishing pond, and a 1.5-mile segment of the Bluestone Trail.

Kids Castle is one of the highlights of the park. It was erected in 1990 as a Community Build project by a group of volunteers. Unfortunately, over the years the weather and wear and tear has contributed to the deterioration of this structure. According to recent inspection there are serious safety concerns that must be addressed. Redesign of this play area is the main impetus behind this master plan.

In addition to the playground, there are serious concerns about the flooding and stormwater management through the park. The park experiences flooding during even minor rain

events, with larger storms putting the City's baseball fields under water for weeks at a time. Kids Castle has also been subject to flooding and experienced closures and damage due to high water levels.

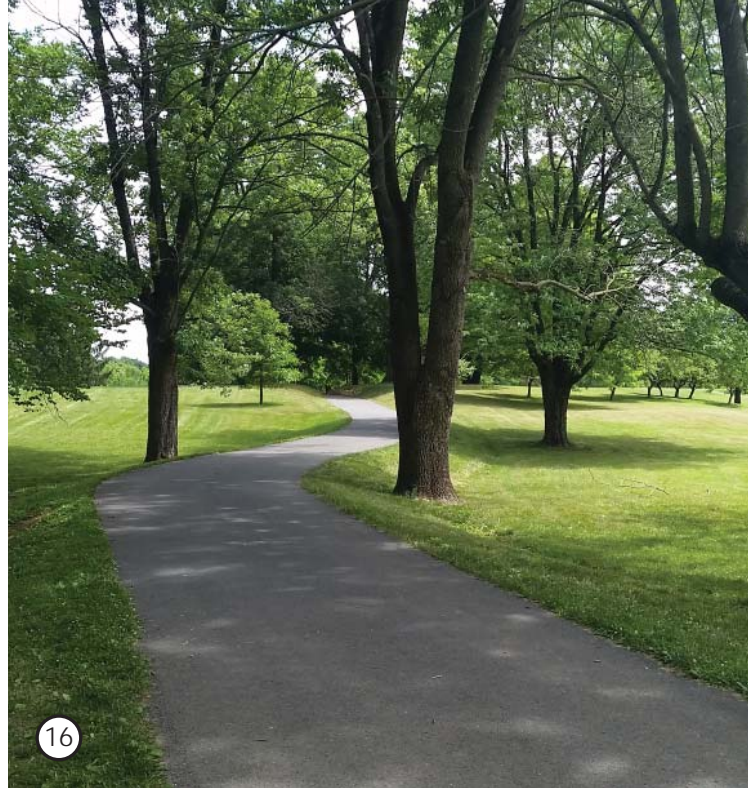
In addition to performing as an open space and recreational centerpiece of Harrisonburg, Purcell Park is increasingly playing a front-line battleground role over resiliency and climate change. In 2009 the city initiated the project to restore 4,750 feet of riparian area along Blacks Run and two tributaries. For a community project on Arbor Day 2018, hundreds of new native trees were planted throughout the park to improve diversity of plant material, increase shade and reduce stormwater runoff into the stream. In 2019, for the 14th time, the city of Harrisonburg was named a "Tree City USA" by the Arbor Day Foundation. For the last few years the city has also been addressing non-native fish, goldfish, infestation in its ponds.







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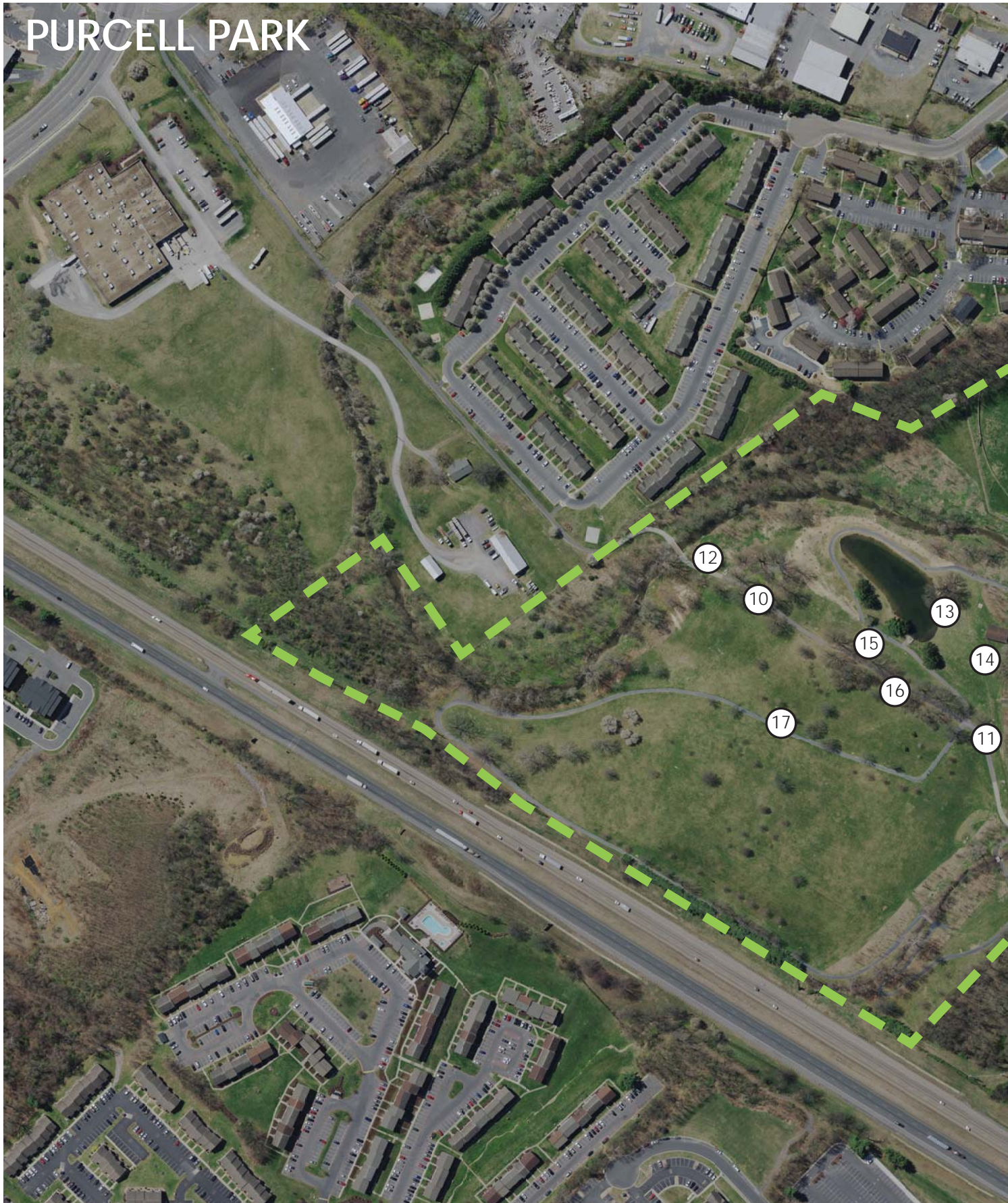


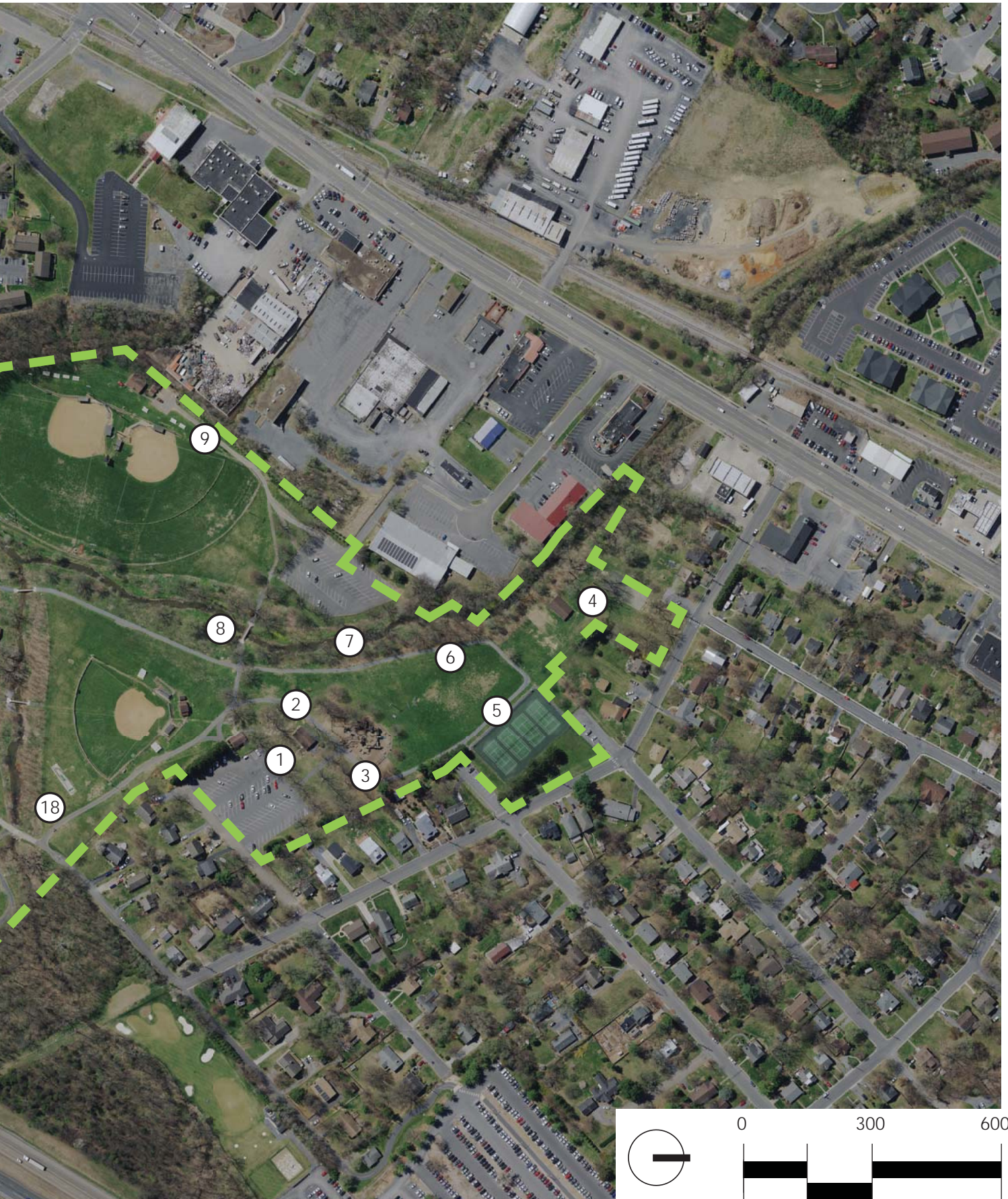
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PURCELL PARK





SITE ANALYSIS

UTILITIES AND AMENITIES:
A NUMBER OF POPULAR RECREATIONAL AMENITIES IN THE PARK IN NEED OF UPGRADING. MINIMAL UTILITIES IN THE PARK.

NATURAL RESOURCES:
PARK CONTAINS A CONSERVATION EASEMENT, ONE POND AND THREE STREAM SEGMENTS. NO CRITICAL HABITATS IDENTIFIED AT THIS TIME.

KIDS CASTLE PLAYGROUND:
WELL LIKED AND WELL USED, BUT SERIOUS ONGOING SAFETY AND MAINTENANCE ISSUES.

VEHICULAR ACCESS AND PEDESTRIAN CIRCULATION:
TRAILS HEAVILY USED, ACCESSIBILITY NEEDS IMPROVING. PARK VISIBILITY IS LACKING.

TOPOGRAPHY AND VEGETATION:
PARK CONTAINS ROLLING HILLS AND PASTORAL VEGETATION. FLOODPLAIN AREAS SUFFER REPEATED INUNDATION.

HYDROLOGY:
REPEATED FLOODING AND WATER QUALITY IMPAIRMENT

NATURAL RESOURCE ASSESSMENT

Our team's methodology for assessing the site's natural and cultural resources used a combination of desktop analysis and targeted onsite field evaluation in order to study and verify the extent of information from prior studies and public sources and to connect it to observable conditions on site. Site boundaries, easements, rights of way, structures and topography were studied. The team evaluated on-site amenities with respect to safety, location suitability, potential obsolescence and general condition. Records pertaining to soils, habitats and other natural resources were compiled and documented.

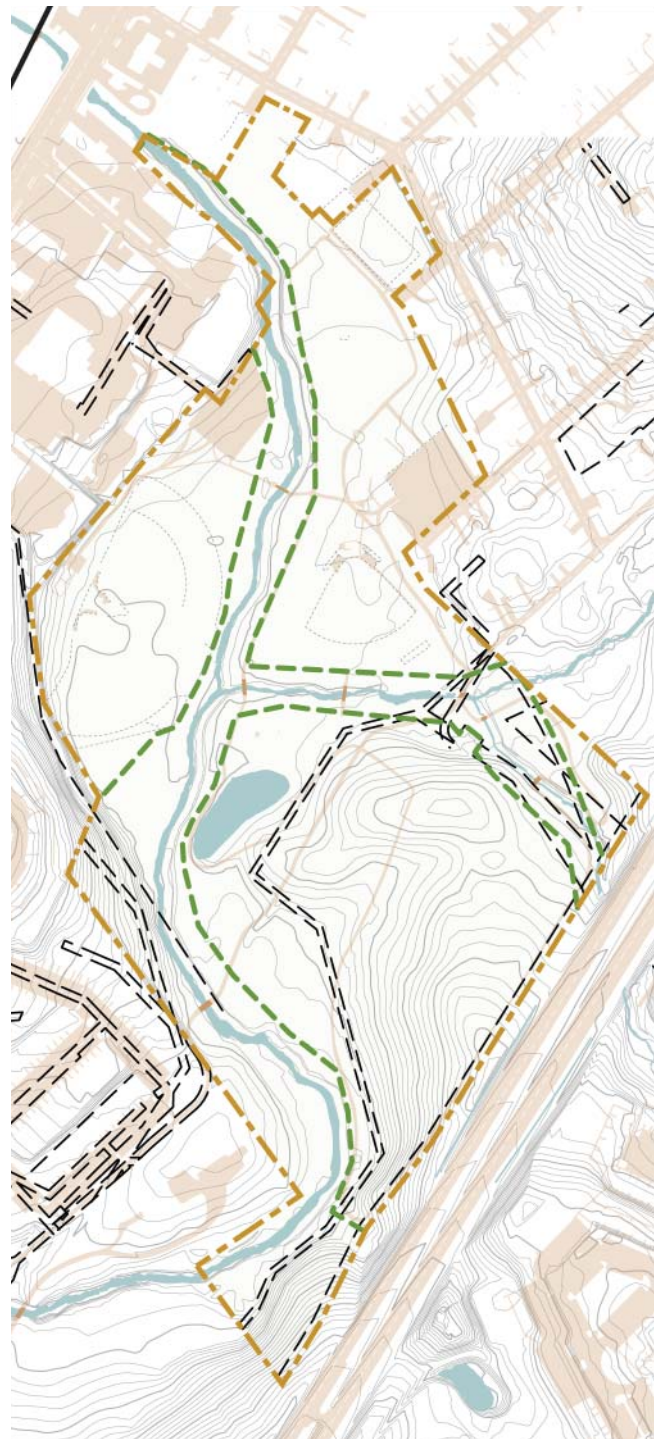
Purcell Park contains a managed conservation easement granted by the City of Harrisonburg to the Valley Conservation Council along Blacks Run. No new development or structures can be built in the conservation easement, and restrictions cover issues such as non-native planting, use of pesticides, pollution, signage and predator control.

A Virginia Cultural Resources Information System review indicates one previous archaeological survey within the study area and no previously recorded archaeological or architectural resources present, but there is the potential to encounter previously unknown archaeological resources within the study area, prehistoric and historic.

The National Wetlands Inventory (NWI) does not report the presence of wetlands within the park limits, but does indicate the presence of one pond and three stream segments: Blacks Run, unnamed tributary to Blacks Run, and Siebert Creek. A formal wetland delineation would be required to confirm the presence of wetland features not report in the NWI.

US Fish and Wildlife Service (USFWS) lists the Madison Cave isopod as an endangered species found in the area. USFWS has no critical habitats identified within the park limits.

Virginia Fish and Wildlife Information service (VaFWS) identifies species that may be found in the area, including the Virginia big-eared bat, northern long-eared bat, Madison Cave isopod, little brown bat, tri-colored bat, brook floater, American water shrew, wood turtle, peregrine falcon, loggerhead shrike, Appalachian grizzled skipper, green floater, migrant loggerhead shrike, spotted turtle, and timber rattlesnake. Potential project impacts to these species should be further studied.



- Park Boundary
- - - Property Easements
- - - Valley Conservation Council Easement

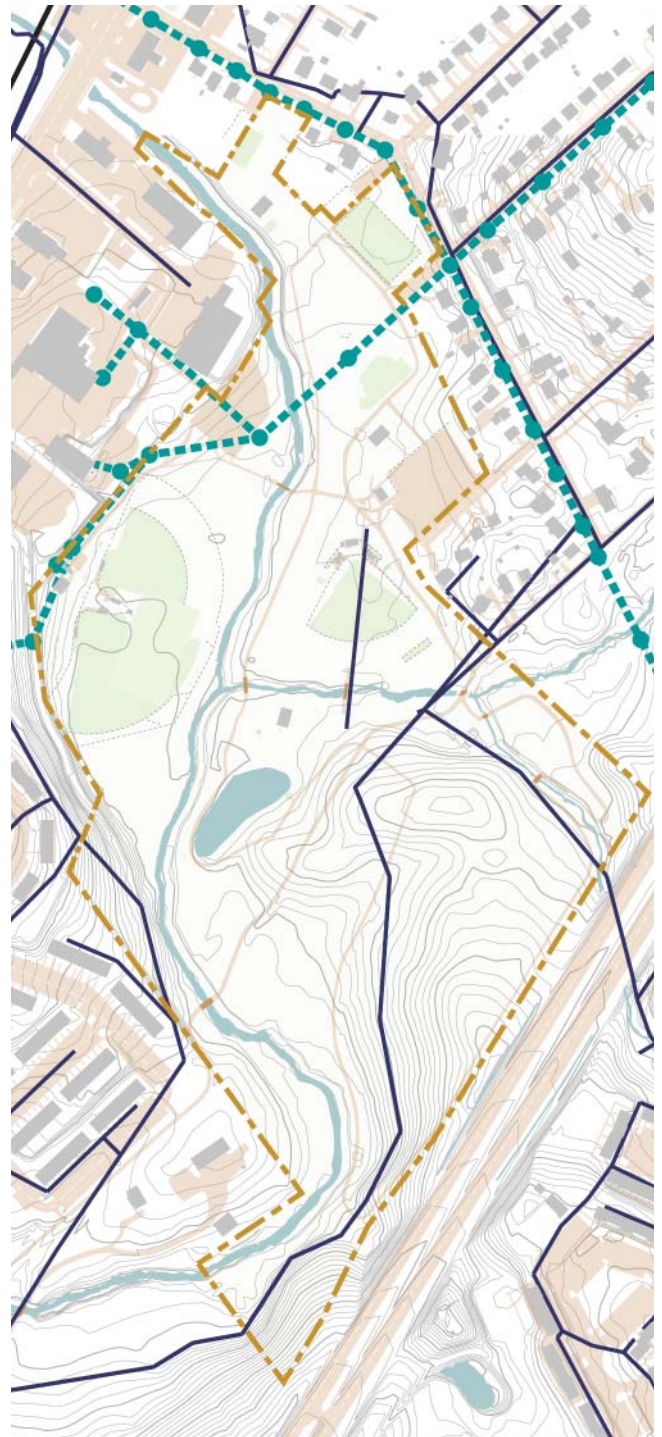
UTILITIES

Utilities present in the park include sewer lines on the eastern portion of the park, three of which intersect Siebert Creek. During large storm events flooding has infiltrated the sewage system and cause combined overflow in the park. Repair and installation of new structures to address this is being undertaken by Harrisonburg Rockingham Regional Sewer Authority.

Overhead power lines are limited within the park, with one line crossing adjacent to Kids Castle. The baseball fields have sport lighting for use in evening events. The basketball court has lighting on a timer. Parking lots and pathways in the park are not currently lit.

There is one central restroom facility, which is closed in the winter. Drinking fountains on site are similarly winterized.

There is no internet or wifi system provided by the Department of Parks and Recreation.



— Sewer

- - - - - Electric

AMENITIES

Purcell Park has three large picnic shelters, which are heavily used. Two of the three are a fair distance from parking areas and do not have accessible access to get to them.

The park has one basketball court and four tennis courts. They are located outside of the floodplain and are generally in good condition. Normal maintenance such as resurfacing should be done on a regular basis. Both basketball and tennis were reported as popular uses by park users.

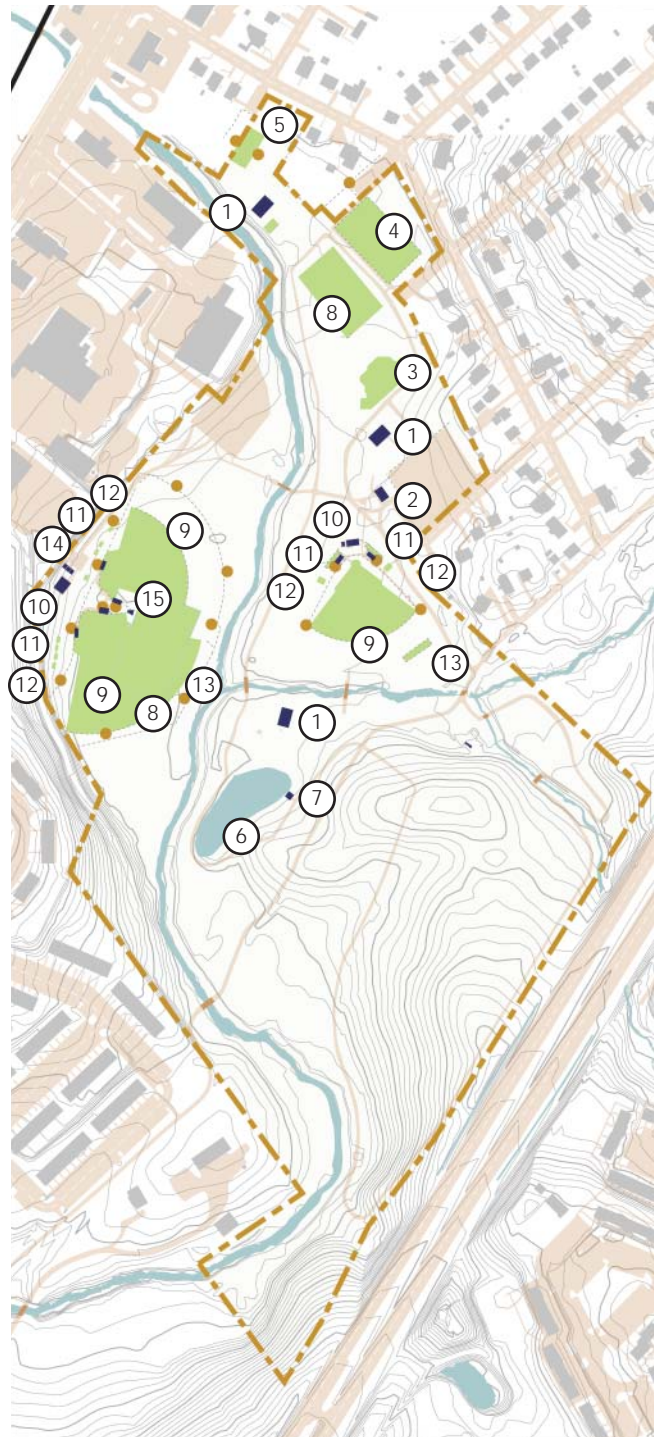
Purcell Park is home to three ballfields, used by Harrisonburg Little League and other players. All of the baseball fields are located within the floodplain and storm events in the park can paralyze the sport for the entire city. Other supporting baseball amenities on site, such as dugouts, concession stands, fencing and batting cages suffer from repeated flooding. There is a desire to upgrade and expand the City's baseball facilities, which is difficult as new development in the floodplain is prohibited.

There are two rectangular field spaces, one of which is a large area used for informal games such as soccer. It has no corner or goal markings and doubles as passive open space for a variety of users. Another field space is a rectangular overlay on the outfields of the western baseball fields, used for football. Players of football and baseball would prefer the uses be separated and individual fields designated for each sport.

A unique amenity of Purcell Park is its fishing pond. The pond has had issues with water quality, which are being worked out. The pond is a unique resource and local groups such as the Arc enjoy bringing people to fish on a regular basis. The pond has limited ADA access, and particularly as it is a resource for the disabled, improving the access should be a high priority.

The park's trail system is also a popular amenity. For more discussion please see the following page on pedestrian circulation.

- ① Picnic Shelter
- ② Restrooms
- ③ Playground
- ④ Tennis Courts
- ⑤ Basketball Court
- ⑥ Fishing Pond
- ⑦ Deck Overlook
- ⑧ Rectangular Field
- ⑨ Baseball Field
- ⑩ Concessions



- ⑪ Dugouts
 - ⑫ Bleachers
 - ⑬ Batting Cage
 - ⑭ Storage
 - ⑮ Announcer
 - Sport Lighting
- 0 250 500 1000

KIDS' CASTLE PLAYGROUND

Kids' Castle Playground is one of the most visited amenities of Purcell Park and was a major focus of the community engagement process and overall master plan effort. It was erected in 1990 as a community build project by a group of volunteers, and many residents clearly remember both playing on it as children and with their families today.

The playground is a wooden structure, full of towers and tunnels and hiding places promoting imaginative play. The towers lack playspaces for very young children, and children who might be too big to fit easily in its narrow passageways. Its accessibility leaves much to be desired. The hiding spaces it contains bring great enjoyment to the children, and also a certain level of fear as parents reported occasionally needing to call emergency services to help find their children.

Unfortunately, over the years the weather and wear and tear has contributed to the deterioration of this structure. The lifespan of a wooden play structure is estimated at about 20 years, and Kids' Castle is approaching 30 years in place. Repeated flooding events have also exacerbated condition issues, as well as caused the playground to be shut down for several weeks at a time.

The main concerns with the playground go beyond maintenance. Community members and children speak of splinters and nails, however more seriously the City's Certified Playground Safety Inspector has identified over 100 Priority 1 Safety Concerns still remaining. A Priority 1 Concern is defined as a "Non-compliant safety concern that may result in permanent disability, loss of life or body part. Condition should be corrected immediately." Most of the deficiencies are classified as Head Entrapment Hazards. The surfacing material is also a serious safety concern and fall hazard. These deficiencies are too serious, and too pervasive, to recommend keeping the playground in place as it is today.

The City has provided continuous maintenance to the playground structures, however the deterioration is such that at this point removal of playground pieces has become the only viable option. Residents have noticed the shrinking playspace and it is time to reassess what kind of amenities will best serve the future of the community.



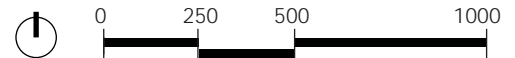


VEHICULAR ACCESS

Vehicular access points are concentrated on the north end of the park. Access to the park from South Main Street is neither highly visible, attractive or direct. Many long time residents were unaware that a public transit stop on South Main would get them to the park. Access off of Monument Avenue crossroads provides close access to the playground, tennis, and sport fields, and is used more frequently by trail users. Small road signs exist, but they are not highly visible.

Parking is generally adequate for most uses, the only conflicts noted were during game days. However the conflicts noted on game days were a significant nuisance to the residential neighbors and adjacent businesses. Other park users reported turning around on game days and going elsewhere due to lack of parking. Informal overflow takes place along residential streets not equipped for it, in grassy areas of the park, and in parking lots of adjacent business owners.

In addition, the Challenger League is a Little League division specifically for those with differing physical abilities. When they use the ballfields, vehicles typically drive up to the edge of the field due to the players' difficulty in getting to them otherwise.



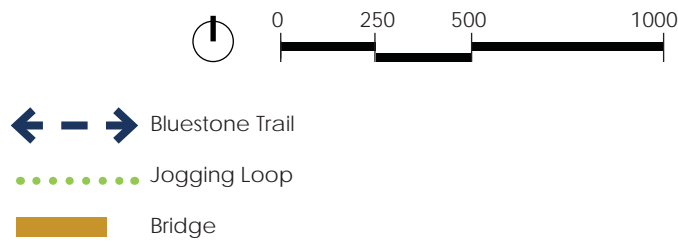
- Parking Area
- Access Point
- Public Transit Stop

PEDESTRIAN CIRCULATION

Trails in the park do a good job of connecting the site and community. They are heavily used and enjoyed by many segments of the population. A segment of the Bluestone Trail, connecting James Madison University and neighborhoods to the south, runs through the park. A 1.5 mile jogging loop is heavily used by runners who like to keep track of distance and time. People of all ages enjoy taking walks, walking dogs, or riding bikes along the park trails.

Accessibility could be improved. Not all park amenities are connected by accessible paths, in particular two of the picnic shelters do not have direct access. There is also an existing pedestrian bridge unconnected to pedestrian paths that could be brought in to the trail system.

The trails are generally in good condition, although bridges across the streams, as well as some soft surface trails, show erosion from stream flooding events.



TOPOGRAPHY AND VEGETATION

Topography

Purcell Park offers an interesting undulating topography. Blacks Run and its tributary flow through the center of the site, so that the site is roughly in the form of a valley and most the site falls within the 100 years floodplain.

The majority of the flat land within the park is adjacent to Blacks Run and is flooded on a regular basis. Most of the active recreational amenities, including the athletic fields, are within this portion of the park.

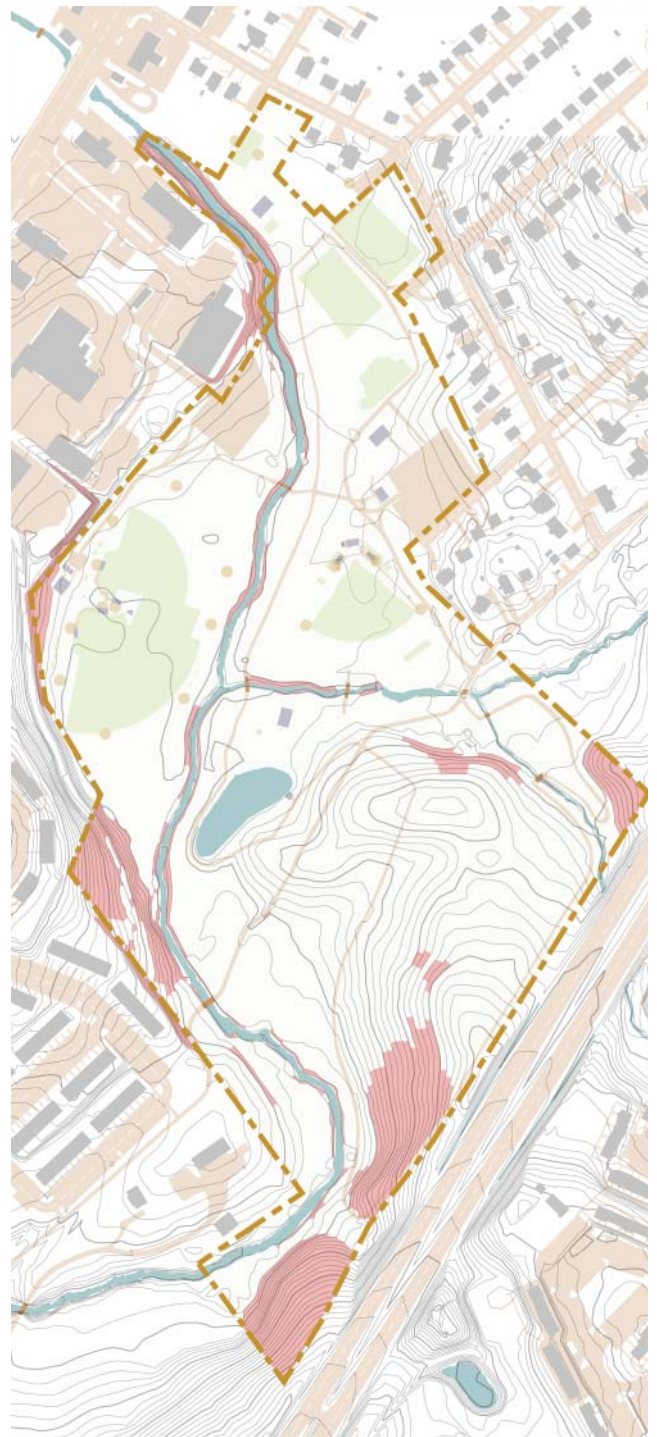
The southeast segment of the park, abutting Interstate 81, is hilly and forms an interesting undulating topography that is mostly used for passive recreation.

The western edge of the park between the ballfields and the property line rises sharply up towards the adjacent commercial, industrial and residential sites. The grade change towards Main Street provides a logistical barrier to additional site access.

Vegetation

Vegetation in the park is primarily grass with tree planting. There are no formal garden areas on site. Many of the trees are well established and in good condition, however all untreated ash trees throughout the site are dying due to the emerald ash borer infestation and a great many have already been removed. Younger trees have been planted throughout the park as replacements.

The riparian corridor around Blacks Run and its tributaries has been naturalized with a mixture of native and non-native riparian vegetation. The buffer area is mostly well established and does a good job slowing the water as it enters Blacks Run. However, the buffer also blocks the view of the Blacks Run completely, making the stream visible only from the few crossings/bridges.




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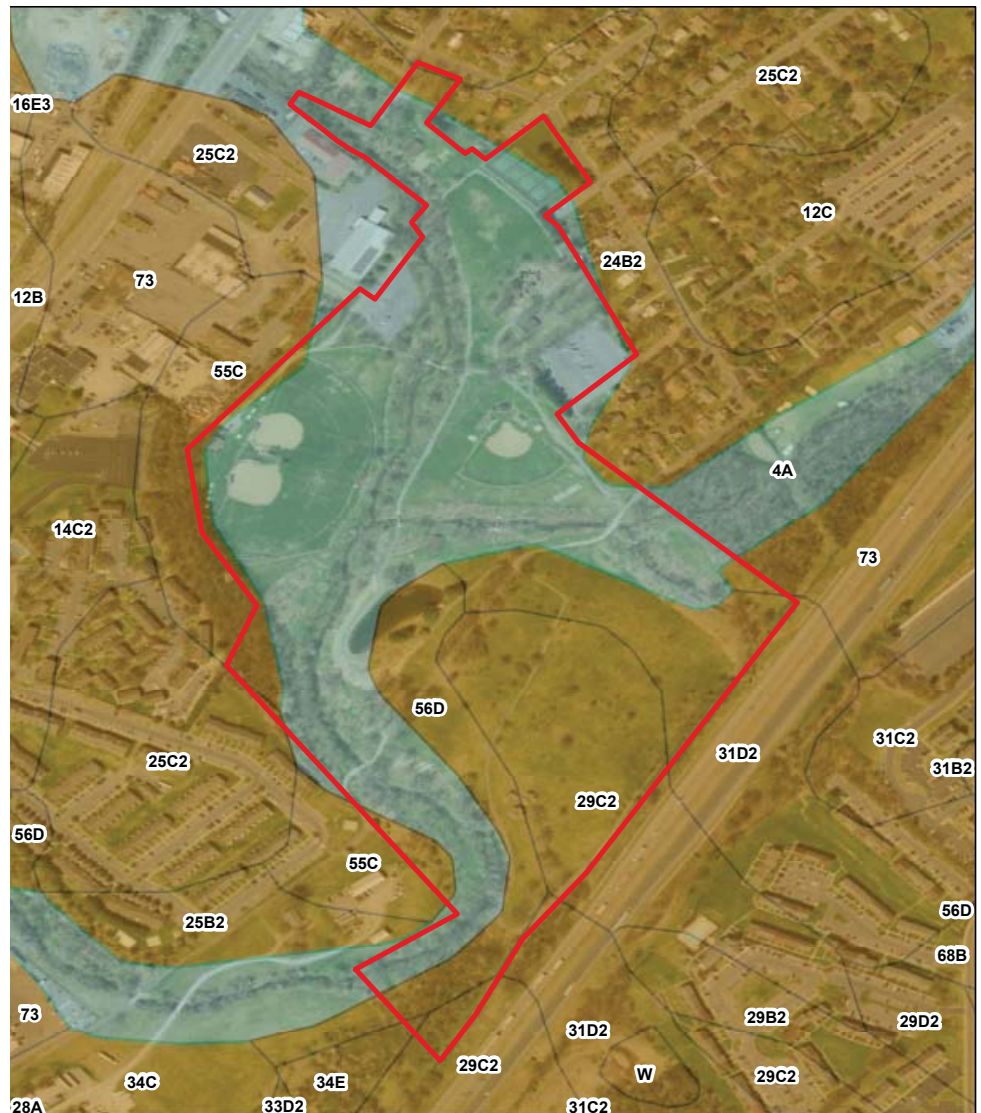
— Contour Lines at 2-foot intervals

Steep Slopes, 15% grade

SOILS

According to the USDA Web Soil Survey, Purcell Park contains predominantly hydric soils, highly erodible soils, and hydrologic soil groups B and C.

 Hydric Soil within Park Limits (4A)



Rockingham County, Virginia (VA165)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	Hydric Rating	K-Factor	Hydrologic Soil Group
4A	Aquic Udifluvents, nearly level	34.6	60.90%	80	0.2	C
24B2	Endcav silt loam, 2 to 7 percent slopes, eroded	1.1	1.90%	0	0.49	C
25C2	Endcav silt loam, 7 to 15 percent slopes, rocky, eroded	0.1	0.20%	0	0.49	C
29C2	Frederick and Lodi silt loams, 7 to 15 percent slopes, eroded	8.5	14.90%	0	0.37	B
31D2	Frederick and Lodi gravelly silt loams, 15 to 25 percent slopes, eroded	5.1	9.00%	0	0.2	B
34E	Frederick-Rock outcrop complex, 15 to 45 percent slopes	0	0.10%	0	0.37	B
55C	Rock outcrop-Carbo complex, 0 to 20 percent slopes	2.1	3.80%	0	-	-
56D	Rock outcrop-Frederick complex, 15 to 45 percent slopes	5.1	8.90%	0	-	-
73	Urban land	0.2	0.40%	0	-	-
Totals for Area of Interest		56.9	100.00%			

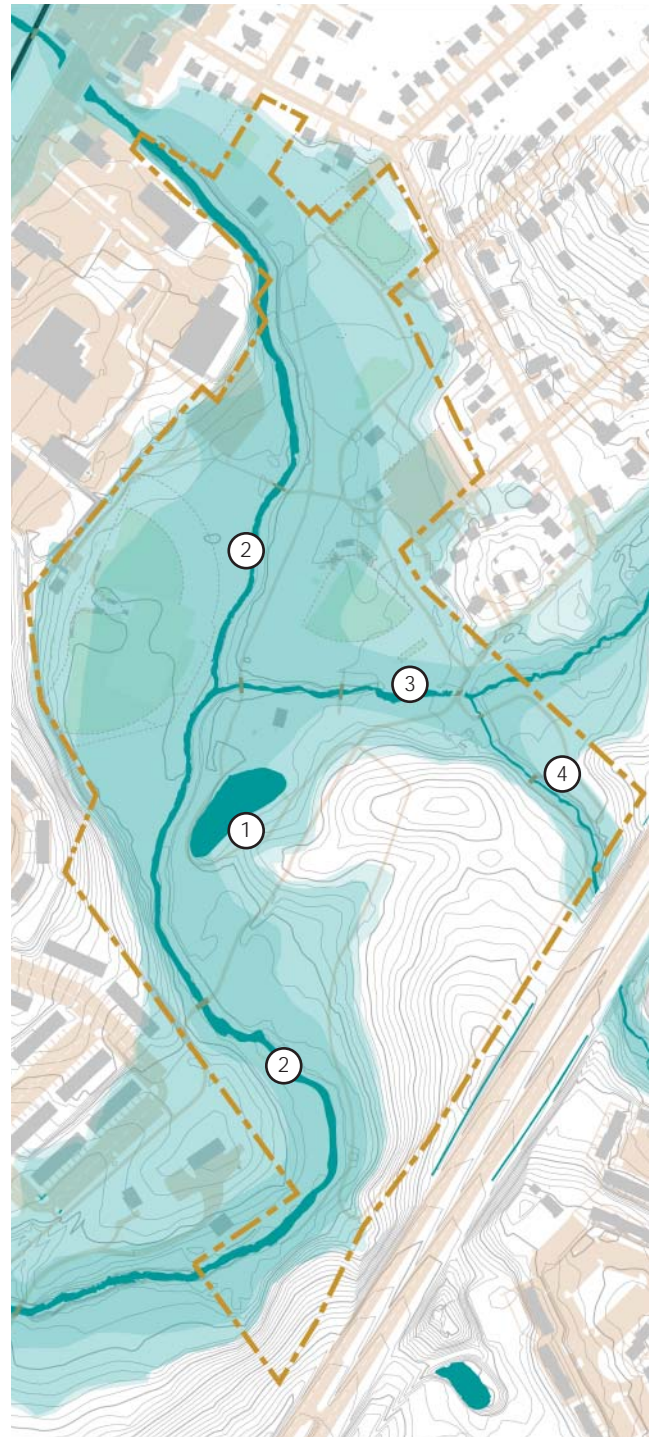
HYDROLOGY

Purcell Park is located in the South Fork Shenandoah Watershed (HUC 02070005). Purcell Park contains three streams running north to south, and one pond. Portions of the park are within FEMA's 100 year floodplain.

Blacks Run is listed as a TMDL priority due to impaired conditions. Blacks Run is listed as a Clean Water Act Section 303(d) stream for E. coli, fecal coliform, general benthics, sediment, and phosphorus.

In 2009 stream restoration work was done to restore sinuosity to the waterway and plant a natural riparian buffer. That work significantly improved the stream corridor's natural qualities and habitat potential, but offsite constraints continue to impact water quality.

Critical site constraints, limiting the full time use of Purcell Park, are the inundation limits and frequency of flooding in the park. To understand the flood inundation limits and develop strategies to reduce the amount of flooding, the team reviewed existing FEMA models, and enhanced them by including higher frequency storm events into the modeling. This allowed the team to assess the flood risk on park property and identify critical hydraulic constraints along Blacks Run exacerbating the flood inundation limits.



- ① Pond
 - ② Blacks Run
 - ③ Tributary 1 - Siebert Creek
 - ④ Tributary 2 - unnamed
- | | |
|--|-------------------|
| | Floodway |
| | 100 yr Flood Zone |
| | 500 yr Flood Zone |

Inundation Map



Upstream Limit of Study

Upstream Limit of Study

Blacks Run

Purcell Park

Trib 2 to Blacks Run

Upstream Limit of Study

Trib 1 to Blacks Run

Downstream Limit of Study

Legend

- 100yr Flood Extents
- 10yr Flood Extents
- 2yr Flood Extents

Background

RK&K investigated historic mapping, photography and survey information for background on the current channel alignment. Human activity and historic development patterns can have long lasting influences on stream channels and present day hydraulics.

The downstream portion of Purcell Park and Blacks Run has a wide and sweeping channel meander. The inside of this meander is presently the Pheasant Run Townhomes and a privately owned parcel. As can be observed in the 1960's aerial imagery, there are a farm and farm buildings through the inside of that meander. It was common for farmers in late 19th and early 20th centuries to divert rivers and channels to till the bottom lands since they are typically very fertile. The meander here is especially tight and so could be a plausible explanation on its origin. That meander and other factors are likely creating a backwater that is contributing to flooding of Purcell Park.

It is very difficult to overcome these historic legacies. Understanding the possible causes is helpful on determining effective solutions.

Hydraulic Modeling

Blacks Run is a FEMA Zone AE mapped floodplain and as a result has existing detailed hydrology and hydraulic modeling. HEC-RAS version 5.0.7 was utilized to perform a 2D hydraulic analysis of Blacks Run and Trib 1. The 2D analysis was determined to be the best modeling technique due to the importance of the confluence of the two tributaries on the overall flooding within Purcell Park. A 2D modeling approach is able to

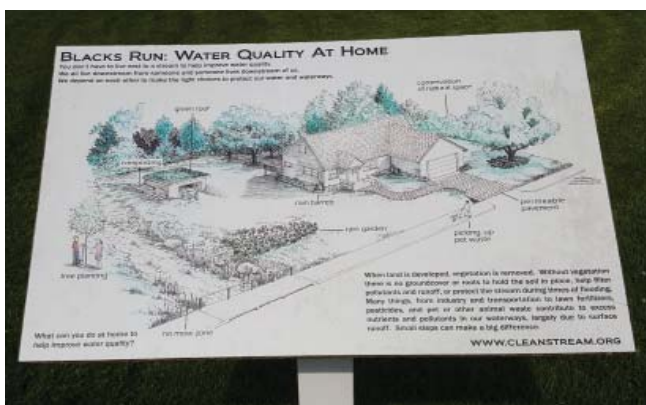
more accurately capture the flow characteristics of such a confluence because it takes into account flow moving in multiple directions.

The 2D model was generated utilizing public domain information. USGS lidar derived DEMs with a 1/9 arc second density (3.4 meters) was used to build the terrain for the model. The National Land Cover dataset (NLCD) was utilized to define the land cover for Manning's roughness values.

The FEMA flood profile for Blacks Run shows that the downstream bridge leading to the industrial commercial center just north of Stone Spring Road is a major contributor to controlling flooding within Purcell Park. Flow from all the provided flood events overtops the access road downstream of cross section AG. This overtopping leads to a substantial increase in water surface elevation from downstream to upstream at the access road. The 2D model's downstream terminus is at the same location as FEMA cross section AG. In addition, the narrowing of the floodplain overbank just downstream of the park likely adds to the increased water surface elevation.

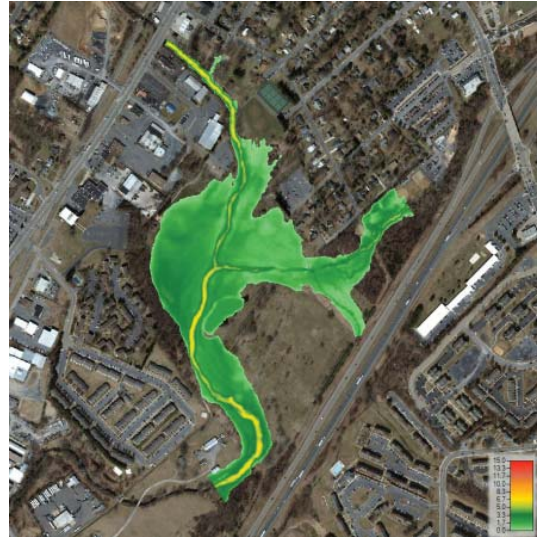
The model utilized four boundary locations. One boundary was set at the upstream terminus of the terrain for both Blacks Run, Trib 1 to Blacks Run, and Trib 2 to Blacks Run. These boundary conditions were set to a flow hydrograph and the flowrates were set to the discharges calculated utilizing urban regression(streamstats). The third boundary was set at the downstream end of the model along Blacks Run. For the 100-year and 10-year plans, the boundary was set to stage-hydrograph where the stage was set to match the FEMA effective water surface elevation from the profile in the Harrisonburg Flood Insurance Study (FIS) at cross section AG. Since there is no 2-year flood profile in the FIS, this model run was assigned a normal depth boundary condition.

The results of the 2D model show inundation of Purcell Park under the 2, 10, and 100- year flood events. Given the extent and depth of the flooding as well as the off-site constraints, it was concluded that it is unlikely additional floodplain storage or reconnection would substantially decrease flooding within the Park.





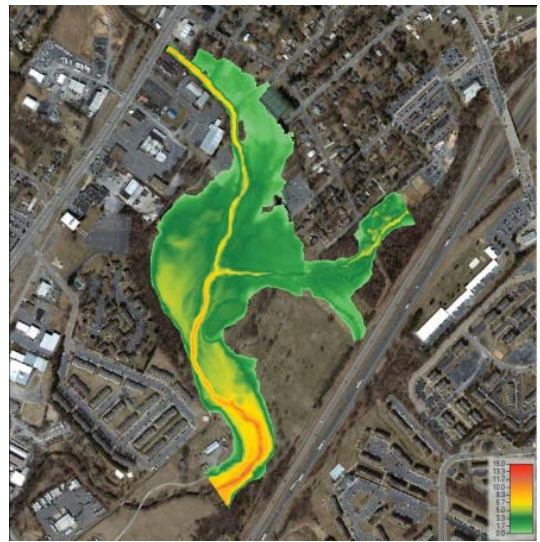
two year flood event - inundation



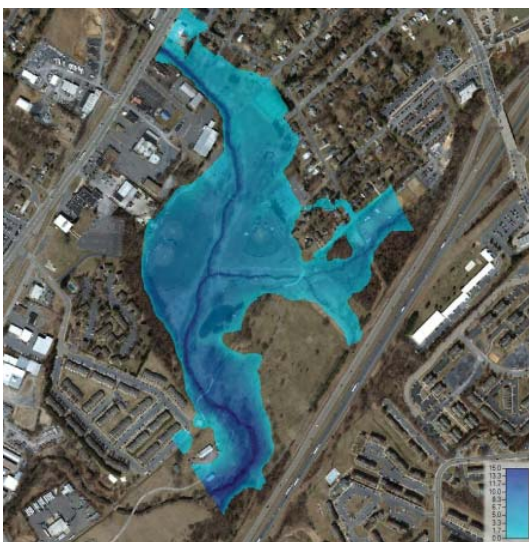
two year flood event - water depth



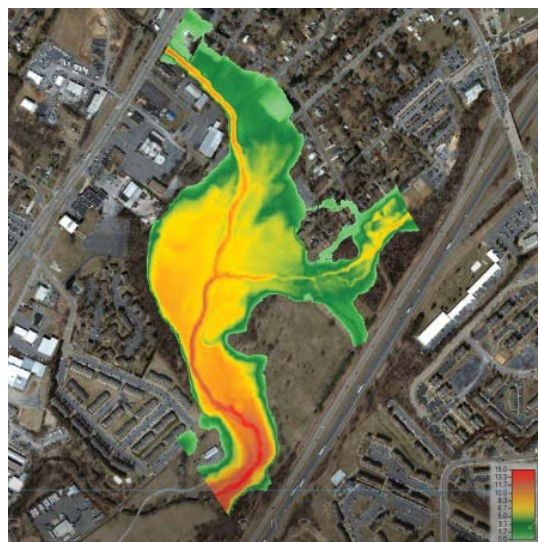
ten year flood event - inundation



ten year flood event - water depth



hundred year flood event - inundation



hundred year flood event - water depth

3. DEMOGRAPHICS AND POLICY

HARRISONBURG IS MORE DIVERSE THAN THE SURROUNDING COUNTY.

HARRISONBURG HAS A HIGH PERCENTAGE OF YOUNG ADULTS DUE TO THE STUDENT POPULATION.

HARRISONBURG HAS A HIGHER PERCENTAGE OF ADVANCED DEGREE HOLDERS, AND A HIGHER PERCENTAGE OF THOSE WITHOUT A HIGH SCHOOL DIPLOMA, THAN THE US AVERAGE.

HARRISONBURG RESIDENTS REPORT PLAYING TEAM SPORTS MORE FREQUENTLY THAN STATE AVERAGES.

HARRISONBURG RESIDENTS ENJOY RUNNING, FISHING AND HIKING.

WALKING AND SWIMMING ARE THE MOST POPULAR FITNESS ACTIVITIES.

DEMOGRAPHIC PROFILE

Introduction

Gaining a clear understanding of the existing and projected demographic character of the City is an important component of the planning process. By analyzing population data, trends emerge that can inform decision making and resource allocation strategies for the provision of parks, recreation, and open space management. This demographic profile was compiled in September 2019 from a combination of sources including the ESRI Business Analyst, American Community Survey, and U.S. Census.

The following topics will be covered:

- Population Summary
- Age and Gender Distribution
- Race/Ethnic Character
- Educational Attainment
- Household Data
- Employment
- Health Rankings

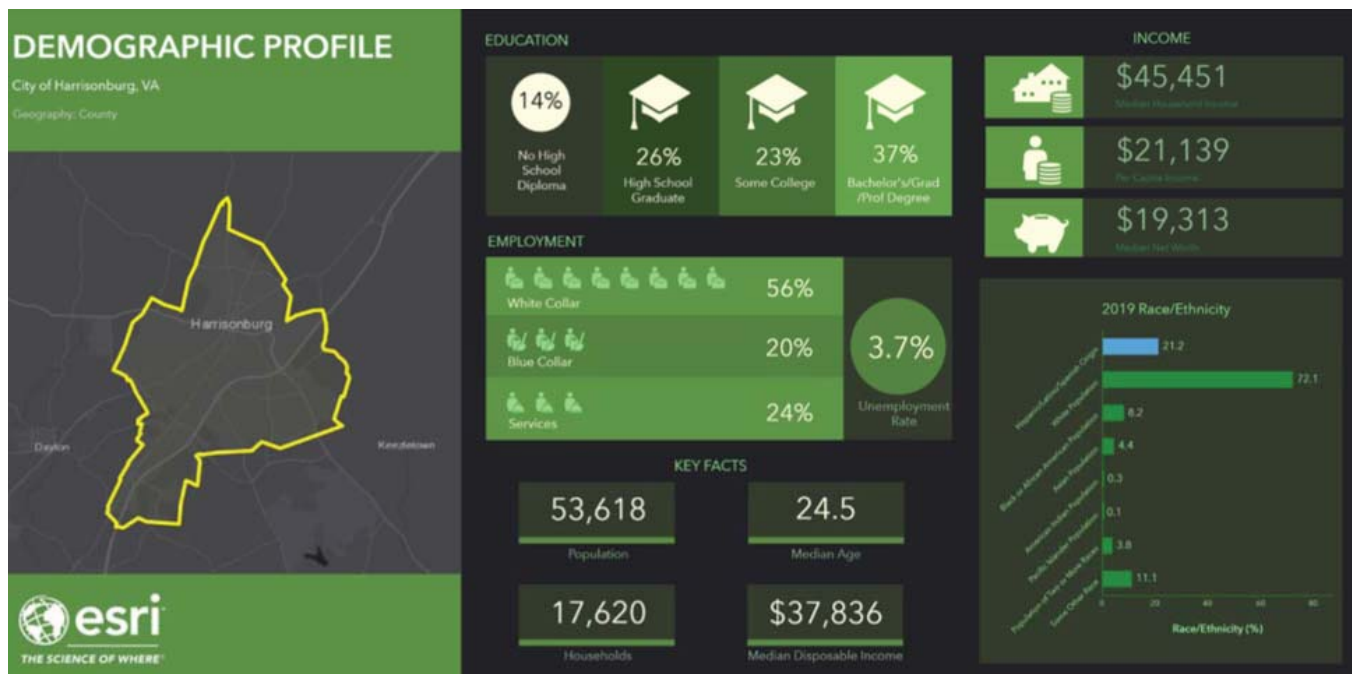


Figure 3.1: City of Harrisonburg Demographic Overview

Population Summary

Growth rates can be a strong comparative indicator of an area’s potential for economic development. From 2000 to 2010, the population of City of Harrisonburg grew 1.92 percent annually each year, but is expected to slow to just one percent from 2010 to 2019. The City of Harrisonburg is growing at a faster rate than Rockingham County (0.87%) and the State of Virginia (0.82%). Figure 3.2 below shows a visual representation of the population growth rate between 2010 and 2019. The population is projected to reach over 62,000 people in 2035 if growth rates continue as expected, as seen in Figure 3.3.

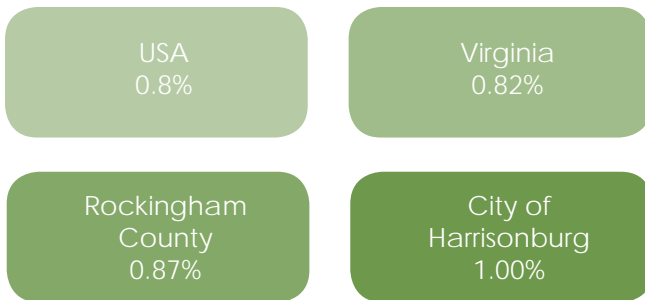


Figure 3.2: Population Projected Annual Growth Rates (2010 – 2019)

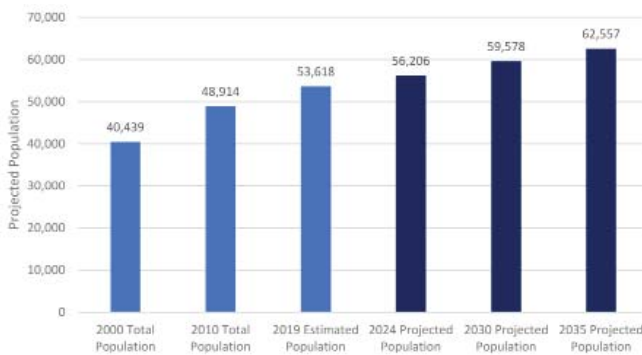


Figure 3.3: Projected Population Trends from 2000 to 2035
Source: ESRI Business Analyst; Population Projections based on U.S. Census projected 2019 – 2024 growth rate of 0.95%.

Age and Gender Distribution

City of Harrisonburg has more females (53.11%) than males (46.89%). Gender distribution in Virginia and the United States is more evenly balanced.

	City of Harrisonburg	VA	USA
2019 Female Pop. (%)	53.11%	50.81%	50.75%
2019 Male Pop. (%)	46.89%	49.19%	49.25%

Table 3.4: City of Harrisonburg Gender Distribution Compared to State and National Averages

The median age in the City of Harrisonburg in 2019 was 24.5 years old, significantly younger the State of Virginia (41.8) and the United States (38.5). The median age in Harrisonburg is expected to increase slightly to 24.6 years old in 2024.



Figure 3.5: Median Age of City of Harrisonburg between 2010 and 2024

Looking at the population age breakdown by five-year increments in the Figure below, there are a few key conclusions.

- The City of Harrisonburg has a high concentration of those between 15 and 24 years old. This age range made up 44 percent of the population in 2010; in 2019, it is estimated that this group decreased in size to 40 percent of the population.
- A key driver of the age distribution in Harrisonburg is its universities. That distribution is expected to remain relatively constant.
- Those between 25 – 29 years old (8.6%) and 30 to 34 years old (6.3%) are the second most populous age groups.
- All other age groups make up less than 5 percent of the population.
- The age distribution is expected to stay relatively the same from 2019 to 2024 for all other age groups besides 15 to 24 year olds. The major changes that are expected are only within 2 percentage points.

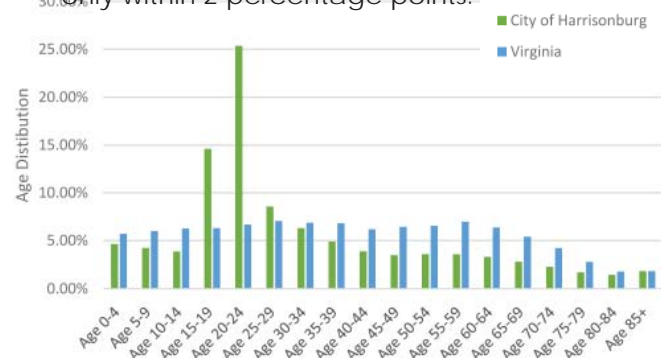


Figure 3.6: 2019 Age Distribution in City of Harrisonburg

Race/Ethnic Character

In the United States, communities are generally becoming more diverse. Before comparing this data, it is important to note how the U.S. Census classifies and counts individuals who identify as Hispanic. The Census notes that Hispanic origin can be viewed as the heritage, nationality, lineage, or country of birth of the person or the person's parents or ancestors before arrival in the United States. In the U.S. Census, people who identify as Hispanic, Latino, or Spanish are included in all of the race categories. Figure 3.7 reflects the approximate racial/ethnic population distribution.

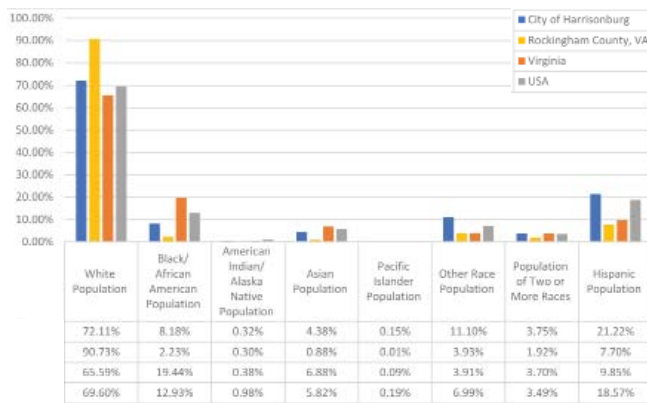


Figure 3.7: 2019 Racial/Ethnic Diversity of City of Harrisonburg

- The City of Harrisonburg is more diverse than Rockingham County, but not more diverse than the State of Virginia and the United States.
- The minority population in the City of Harrisonburg is 36.06 percent, with 11 percent identifying as a race not listed on the U.S. Census. Approximately 8 percent of the population is African American.
- Those that identify as Hispanic make up 21.2 percent of the total population. This is higher than all other neighboring geographies, including the United States (18.6%).

Educational Attainment

The chart below shows the percentage of residents (18+) that obtained various levels of education. The City of Harrisonburg ranked higher than the United States in higher education. Approximately 15.7 percent of City residents had earned a graduate/professional degree, compared to 12.5 percent of United States citizens. However, the City of Harrisonburg has a higher percentage of those without a high school

education, at 7.6 percent, compared to the United States average of 4.9 percent.

Level of Education	City of Harrisonburg	R. Virginia County	USA
Less than 9th Grade	7.56%	7.33%	4.01%
9-12th Grade/No Diploma	6.85%	8.55%	5.90%
High School Diploma	22.06%	29.26%	20.22%
GED/Alt Credential	3.63%	5.62%	3.85%
Some College/No Degree	15.56%	16.07%	18.62%
Associate's Degree	7.01%	6.43%	8.05%
Bachelor's Degree	21.66%	15.59%	22.30%
Graduate/Prof Degree	15.67%	11.14%	17.06%

Table 3.8: 2019 City of Harrisonburg Educational Attainment

Household Data

- The median household income in Harrisonburg in 2019 is \$45,451. This was lower than Rockingham County (\$58,579), the State of Virginia (\$73,549) and the United States (\$60,548). Approximately 16.5% of residents make less than \$15,000 year.
- The median home value in the City of Harrisonburg is \$214,769, compared to Virginia (\$287,754) and the United States (\$234,154).
- The average household size is 2.61 in the City of Harrisonburg, compared to 2.56 in Virginia, and 2.59 in the United States.
- Approximately 13.4% of households in the City of Harrisonburg receive food stamps, compared to the rate in the County of 6.3 percent, and the State of Virginia at approximately 12.7%.
- Approximately 16.95% of residents live with some sort of hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and/or independent living difficulty. This is lower than the national average (25%).

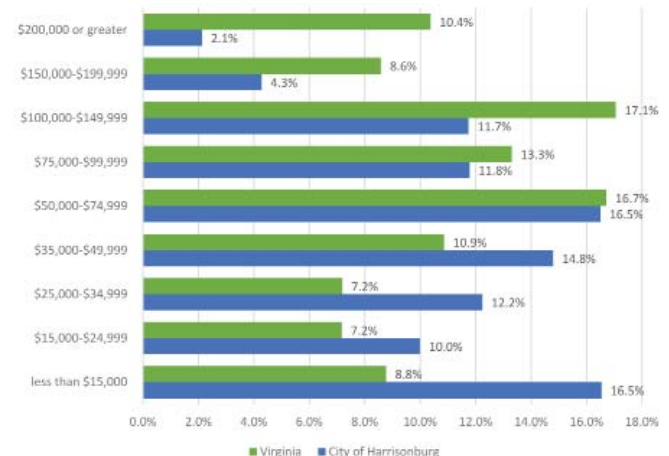


Figure 3.9: Median Household Income Distribution in City of Harrisonburg; Source: ESRI Business Analyst

Employment

- Roughly 56 percent of the population is employed in white collar positions, which typically perform managerial, technical, administrative, and/or professional capacities. Approximately 20 percent were employed by blue collar positions, such as construction, maintenance, etc. About 24 percent of residents were employed by the service industry.
- Only 3.7 percent of the population was unemployed in 2019, compared to the rate of Virginia (3.7%) and the United States (4.6%).
- In terms of commuting, about 15 percent of workers spend seven or more hours commuting back and forth to work each week, and 69.4 percent of commuters drive alone in a car to work.



Figure 3.10: Employment Overview in City of Harrisonburg, Virginia
Source: ESRI Business Analyst

Health Rankings

Understanding the status of the community's health can help inform policies related to recreation and fitness. Robert Wood Johnson Foundation's County Health Rankings and Roadmaps provide annual insight on the general health of national, state, and county populations. The 2019 Rankings model shown in Figure 3.11 highlights the topic areas reviewed by the Foundation.

The health ranking gauged the public health of the population based on "how long people live and how healthy people feel while alive," coupled with ranking factors including healthy behaviors, clinical care, social and economic, and physical environment factors.¹

State Health Ranking

In 2018, the United Health Foundation's America's Health Rankings Annual Report ranked Virginia as the 20th healthiest state nationally. The health rankings consider and weigh social and environmental factors that tend to directly impact the overall health of state populations as illustrated in Figure 3.12. The state moved down one position in the ranking since 2017.

¹ University of Wisconsin Population Health Institute & Robert Wood Johnson Foundation, County Health Rankings 2019, <http://www.Countyhealthrankings.org>

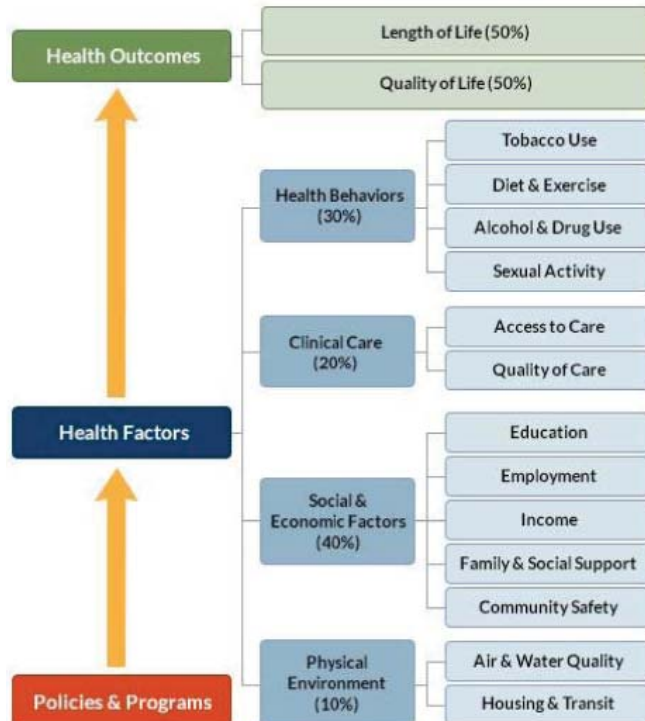


Figure 3.11: County Health Ranking Model
Source: Robert Wood Johnson Foundation

Strengths of Virginia health include:

- Low violent crime rate
- High immunization coverage among children
- Low prevalence of excessive drinking

Challenges of Virginia health include:

- Lower rate of mental health providers
- High percentage of uninsured population
- Low per capita public health funding



Rockingham County ranked
17th of 133
Virginia Counties for Health Outcomes.



Figure 3.12: 2018 Virginia Health Ranking Overview
Source: United Health Foundation's America's Health Rankings Annual Report 2018

PARKS AND RECREATION INFLUENCING TRENDS

Introduction

The changing pace of today’s world requires analyzing recreation trends from both a local and national level. Understanding the participation levels of City residents using data from the U.S. Census Bureau, combined with research on relevant national recreation trends, provides critical insights that help to plan for the future of parks and recreation. These new shifts of participation in outdoor recreation, sports, and cultural programs are an important component of understanding and serving your community.

Part I: Recreation Behavior and Expenditures of Harrisonburg Households

Local Recreational Expenditures

Data from the Bureau of Labor Statistics provides insights about consumer expenditures per household in 2019. The following information was sourced from ESRI Business Analyst, which provides a database of programs and services where Harrisonburg residents spend their money. The table below shows the average dollars spent on various recreational products/services. Money spent on fees and admissions related to entertainment and recreation generated the highest revenues of \$8.7 million in Harrisonburg.

Expenditure	Family Average	Community Total
Ent./Rec - Fees and Admissions	\$493.34	\$8,692,624
Member Fees for Social/Rec/Civic Clubs	\$163.46	\$2,880,191
Ent./Rec - Sports/Rec/Exercise Equipment	\$143.11	\$2,521,591
Ent./Rec - Toys/Games/Crafts/Hobbies	\$91.55	\$1,613,102
Fees for Recreational Lessons	\$90.76	\$1,599,184
Hunting and Fishing Equipment	\$50.20	\$884,541
Pet Services	\$43.30	\$762,871
Camp Fees	\$28.48	\$501,835
Bicycles	\$21.98	\$387,303
Rental of Boats/Trailers/Campers/RVs	\$15.30	\$269,592
Camping Equipment	\$14.29	\$251,711
Water Sports Equipment	\$5.01	\$88,207
Winter Sports Equipment	\$4.32	\$76,206

Table 3.13: Annual Recreational Expenditures in City of Harrisonburg, Virginia

Outdoor Recreation Behavior

In Figure 3.14, data from ESRI Business Analyst shows popular outdoor recreation activity participation by households in Harrisonburg. Participation was also pulled from the State of Virginia for comparison. The most popular activities in the City of Harrisonburg included:

- Jogging or Running (18%)
- Fresh Water Fishing (16.9%)
- Hiking (15.3%)
- Road Biking (14.3%)

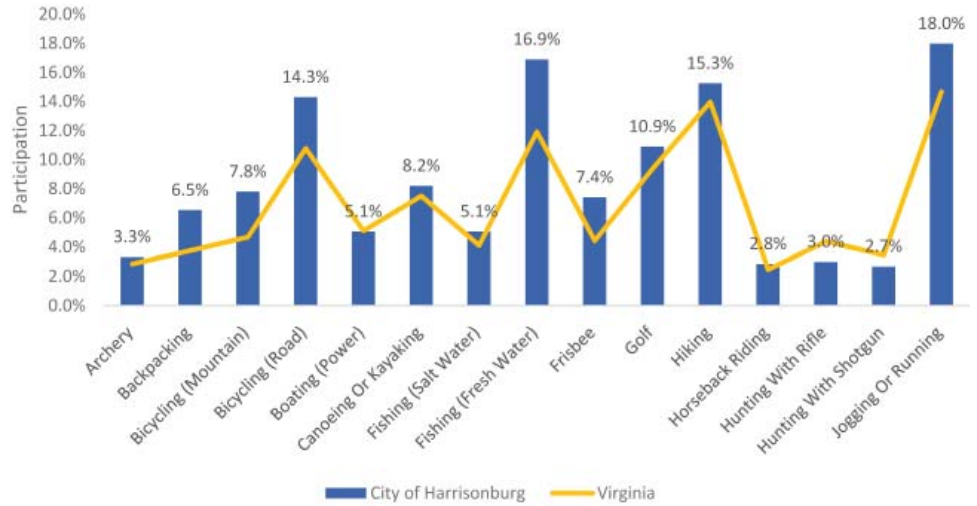


Figure 3.14: Outdoor Recreation Behavior of Harrisonburg compared to the State of Virginia

Fitness and Health Behavior

The figure below shows household participation in various fitness activities. Participation was higher for the following activities:

- Walking for Exercise (20.8%)
- Swimming (18.8%)
- Weight Lifting (12.2%)

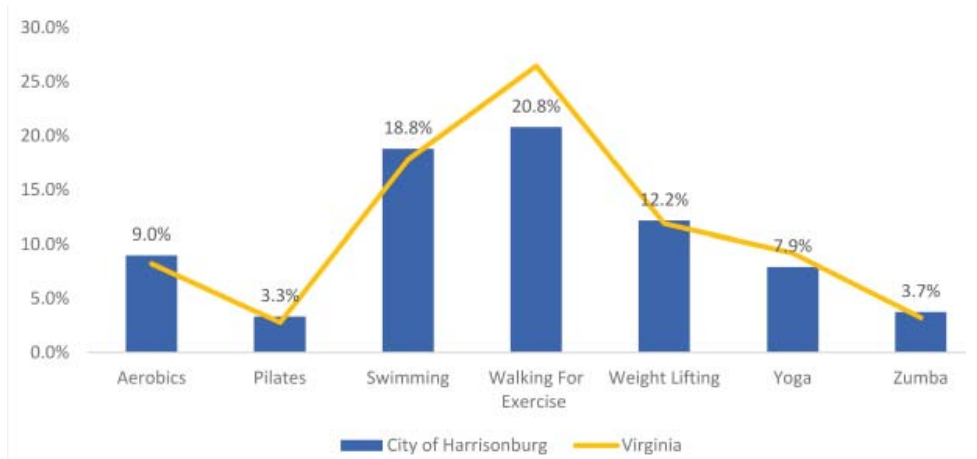


Figure 3.15: Fitness and Wellness Participation of Harrisonburg compared to the State of Virginia

Team Sport Participation

According to census data, households in Harrisonburg had higher participation in team sports than the State of Virginia. The most popular sports in the City included:

- Basketball (14.6%)
- Football (10.5%)
- Volleyball (7.4%)

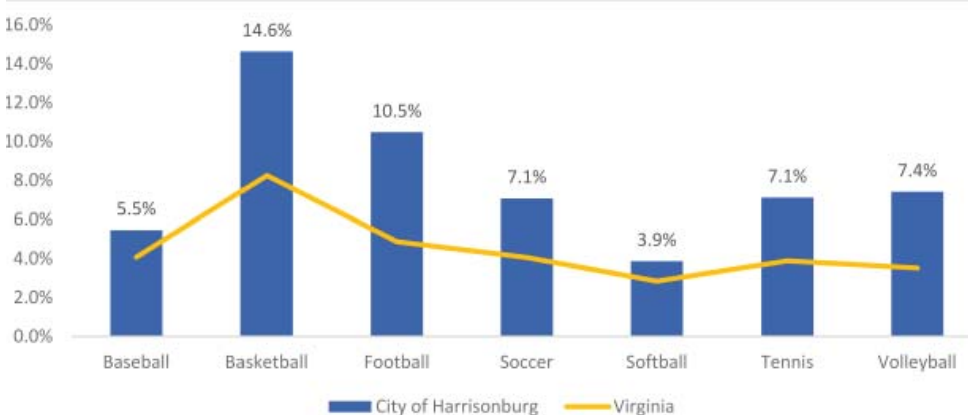


Figure 3.16: Team Sport Household Participation in Harrisonburg compared to State of Virginia

Part II: Parks and Recreation Trends Relevant to Harrisonburg

Adventure Programming

Many local agencies form partnerships with companies that can offer adventure experiences that they otherwise may have not been able to produce. While a lack of resources, time, or expertise may inspire the partnership, both organizations can reap the benefits of providing one-of-a-kind adventure experiences. One example of an effective partnership for outdoor adventure is Roanoke County Parks and Recreation's recently redeveloped Explore Park – an outdoor adventure attraction with trails, camping, zip lines, and challenge obstacles. A number of programs take place at the park – such as introduction to paddleboarding, stargazing and astronomy, wildlife classes, and much more. Riverfront Access provides fishing, boat launches, and tubing – managed by a local concessionaire.



Figure 3.17: Adventure Quest at Explore Park
Source: Roanoke County Parks

Bird Watching

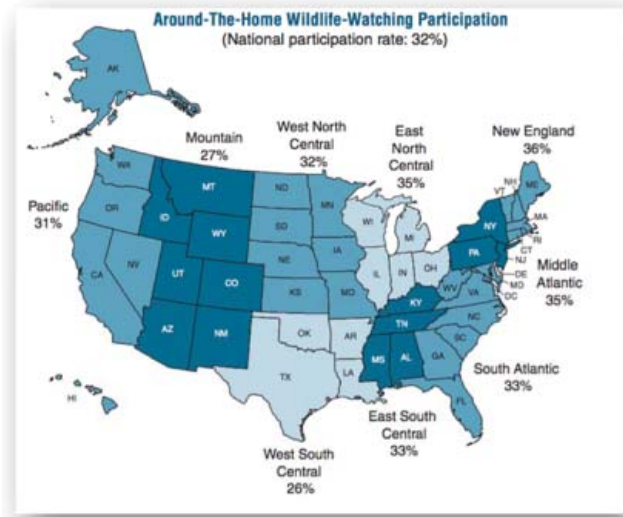


Figure 3.18: Participation in At-Home Wildlife-Watching

It is estimated that in 2016, 45.1 million people participated in bird-watching, according to the U.S. Fish & Wildlife Service National Survey of Fishing, Hunting, and Wildlife Associated Recreation.¹ Of all participants, 86 percent of them observed wild birds around their home.

Approximately 30.5 million people participated in wildlife photography in 2016. Pennsylvania, located in the Mid-Atlantic region, was one of the highest populations that watched wildlife at 35 percent participation, as seen in Figure 3.18. Smart phone apps offered from organizations, such as the National Audubon Society and the Cornell Lab of Ornithology, offer beginners and birding veterans the opportunity to identify hundreds of bird species by size, color, activity, habitat, wing shape, voice, and tail shape. These tools offer unique new programming opportunities for passive recreation.

¹ 2016 U.S. Fish & Wildlife Service National Survey of Fishing, Hunting, and Wildlife Associated Recreation https://wsfrprograms.fws.gov/Subpages/NationalSurvey/nat_survey2016.pdf

Community Events and Festivals

The success rate for festivals can be evaluated on the basis of profit (sales), prestige (media profile), and size (numbers of events). Research by the European Festival Research Project (EFRP)² indicates local and city governments also support and even instigate and manage particular festivals themselves to achieve local or regional economic objectives, often defined very narrowly (sales, jobs, tourists). There are a growing number of smaller, more local, community-based festivals and events in communities, most often supported by local councils that have been created partly as a reaction to larger festivals that have become prime economic-drivers. These community-based festivals often will re-claim cultural ground based on their social, educational, and participatory value.

² EFRP is an international consortium seeking to understand the current explosion of festivals and its implications and perspective. <http://www.efa-aeu.eu/en/activities/efrp/>, accessed October 2012.

Community Gardens

Communities around the country are building community gardens for a number of far-reaching environmental and social impacts. According to Greenleaf Communities, which supports scientific research in environmental and human health, community gardens offer benefits including:³

Environmental

- Reducing waste through composting
- Improving water infiltration
- Increasing biodiversity of animals and plants
- Improve air and soil quality

Social

- Increases intake of vegetables and fruits
- Promotes relaxation and improves mental health
- Increases physical activity
- Reduces risk of obesity and obesity-related diseases

Some studies show that community gardens can improve the well-being of the entire community by bringing residents together and creating social ties. This activity can reduce crime, particularly if gardens are utilized in vacant lots. In fact, vacant land has the opposite effect of community gardens, including increased litter, chemical and tire dumping, drug use, and decreased property values. By creating community gardens, neighborhoods can teach useful skills in gardening, food production, selling, and business.

³ Katie DeMuro, "The Many Benefits of Community Gardens" Greenleaf Communities, <https://greenleafcommunities.org/the-many-benefits-of-community-gardens>, accessed January 201

Conservation

One of the key pillars of parks and recreation is the role that it plays in conservation. Managing and protecting open space, providing opportunities for people to connect with nature, and educating communities about conservation are all incredibly important. One of the key components of conservation is addressing climate change. Local parks and recreation can help by building climate resilient communities through water management, green infrastructure, and sustainability.



Figure 3.19: Alleghany County, Virginia
Source: Valley Conservation Council

Cycling Trends

These activities are attractive as they require little equipment, or financial investment, to get started, and are open to participation to nearly all segments of the population. The design of a community's infrastructure is directly linked to physical activity – where environments are built with bicyclists and pedestrians in mind, more people bike and walk. Higher levels of bicycling and walking also coincide with increased bicycle and pedestrian safety and higher levels of physical activity. Increasing bicycling and walking in a community can have a major impact on improving public health and life expectancy.

National bicycling trends:

- There has been a gradual trend of increasing bicycling and walking to work since 2005.
- Bike share systems, making bicycles available to the public for low-cost, short-term use, have been sweeping the nation since 2010. Twenty of the most populous U.S. cities have a functional bike share system.
- Bicycle touring is becoming a fast-growing trend around the world, including the United States and Canada. "Travelers are seeking out bike tours to stay active, minimize environmental impact, and experience diverse landscapes and cityscapes at a closer level."⁴
- Urban bike tours, popular in cycle-friendly cities in Europe, are taking hold in the United States as well. Bikes and Hikes LA, an eco-friendly bike and hike sightseeing company



Figure 3.20: Cyclists, Virginia
Source: Shenandoah Valley Bicycle Coalition

founded in September 2014 offers visitors the opportunity to "see the city's great outdoors while getting a good workout."

- One of the newest trends in adventure cycling is "fat bike," multiple speed bikes that are made to ride where other bikes can't be ridden, with tires that are up to 5 inches wide run at low pressure for extra traction. Fat bikes are often used to ride on snow but they are also very effective for riding on sand or mud, or in rough terrain. This bike offers unique opportunities to experience nature in ways that wouldn't be possible otherwise.⁵
- Agencies around the country are working to proactively regulate E-Bikes on their trails and greenways. In September of 2019, the Department of the Interior's land agencies – including the National Park Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, and the Bureau of Reclamation – were ordered to allow E-bikes where other types of bicycles are allowed. According to this policy, E-bikes are no longer defined as motorized vehicles.⁶

⁴ Hope Nardini, "Bike Tourism a Rising Trend," Ethic Traveler, <http://www.ethicaltraveler.org/2012/08/bike-tourism-a-rising-trend/>, accessed March 2014

⁵ Steven Pease, "Fat Bikes, How to Get the Most Out of Winter Cycling," Minnesota Cycling Examiner, <http://www.examiner.com/article/fat-bikes-the-latest-trend-adventure-cycling>, February 1, 2014.

⁶The Great Public Lands E-Bike Rush of 2019, Outside Online, 2019: <https://www.outsideonline.com/2402117/public-lands-ebikes>

Dog Parks

Dog parks continue to see high popularity and have remained among the top planned addition to parks and recreational facilities over the past three years. They help build a sense of community and can draw potential new community members and tourists traveling with pets.⁷

Recreation Magazine⁸ suggests that dog parks can represent a relatively low-cost way to provide an oft-visited popular community amenity. Dog parks can be as simple as a gated area, or more elaborate with "designed-for-dogs" amenities like water fountains, agility equipment, and pet wash stations, to name a few. Even "spraygrounds" are being designed just for dogs. Dog parks are also places for people to meet new friends and enjoy the outdoors.

⁷ Joe Bush, "Tour-Legged-Friendly Parks, Recreation Management, February 2, 2016.

⁸ Emily Tipping, "2014 State of the Industry Report, Trends in Parks and Recreation," Recreation Management, June 2014.

Economic and Health Benefits of Parks

In 2017, the Outdoor Industry Association estimated that national consumer spending on outdoor recreation generated \$887 billion in consumer spending, and directly supported 7.6 million jobs.

- Trails, parks, and playgrounds are among the most important community amenities considered when selecting a home.
- U.S. Forest Service research indicates that when the economic benefits produced by trees are assessed, the total value can be two to six times the cost for tree planting and care.⁹
- Nearly half of active Americans regard outdoor activities as their main source of exercise.¹⁰

The Benefits of Parks: Why America Needs More City Parks and Open Space, a report from the Trust for Public Land, makes the following observations about the health, economic, environmental, and social benefits of parks and open space¹¹ :

- Physical activity makes people healthier.
- Physical activity increases with access to parks.
- Contact with the natural world improves physical and physiological health.
- Residential and commercial property values increase.
- Value is added to community and economic development sustainability.
- Benefits of tourism are enhanced.
- Trees are effective in improving air quality and act as natural air conditioners.
- Trees assist with storm water control and erosion.
- Crime and juvenile delinquency are reduced.
- Recreational opportunities for all ages are provided.
- Stable neighborhoods and strong communities are created.

⁹ Nowak, David J., "Benefits of Community Trees," Brooklyn Trees, USDA Forest Service General Technical Report

¹⁰ Outdoor Recreation Participation Report 2016

¹¹ Paul M. Sherer, "The Benefits of Parks: Why America Needs More City Parks and Open Space," The Trust for Public Land, San Francisco, CA, 2006

Generational Fitness Trends

- In 2015, over 80% of Gen Z (born after 2000) were active, with a quarter being active to a healthy level. Gen Z had the least percentage of inactives.
- Almost half (49%) of all Millennials (born 1980-1999) were involved in high calorie burning activities.
- 48% of Gen X (born 1965-1979) participated at least once a week in a fitness activity or sport.
- The Boomer Generation (born 1945-1964) was the least active in 2015, 34% reporting no activity and only 37% involved in high calorie burning activity.

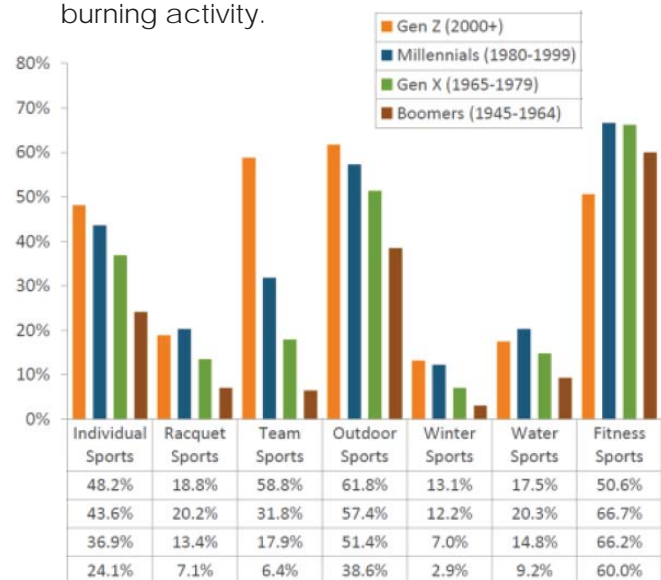


Figure 3.21: Generational Fitness Trends
Source: SFIA Topline Report

Marketing and Social Media

Technology has made it easier to reach a wide-reaching, location-dependent audience which can be segmented by demographics. However, it has also caused a gap in the way parks and recreation agencies are able to communicate. Agencies around the country have not previously dedicated substantial funding to marketing, however it is becoming a critical piece to outreach. Without dedicated staff and support, it can be difficult to keep up with social media trends. It is essential that professionals become advocates for additional resources, training, and education. Having a strong presence on social networks, through email marketing, and through traditional marketing will help enhance the perception from the community.

National Healthy Lifestyle Trends

The population of the United States is becoming more diverse. As demographics are experiencing an age and ethnic shift, so too are landscapes, daily lifestyles and habits changing. The number of adults over the age of 65 has increased, and lifestyle changes have encouraged less physical activity; collectively these trends have created profound implications for the way local governments conduct business. Below are examples of trends and government responses. More and more, local governments are accepting the role of providing preventative health care through park and recreation services. The following facts are from an International City/County Management local government survey^{12,13}:

- 89% of respondents' parks and recreation departments should take the lead in developing communities conducive to active living.
- 84% had already implemented recreation programs that encourage active living in their community.
- The highest priority selected for the greatest impact on community health and physical inactivity was a cohesive system of parks and trails and accessible neighborhood parks.

¹² "Active Living Approached by Local Government: Survey," International City/County Management Association, <http://bookstore.icma.org/freedocs/Active%20Living%20and%20Social%20Equity.pdf>, 2004.

¹³ Brian Stapleton, "The Digital Transformation of Parks and Rec" Parks and Recreation, February 2019: <https://www.nrpa.org/parks-recreation-magazine/2019/february/the-digital-transformation-of-parks-and-rec/>

Nature Play

Playing in nature is an educational opportunity that has numerous benefits, from increasing active and healthy lifestyles, to developing a conservation mindset, to understanding the ecosystems and wildlife that depend on them.¹⁴ According to the report, "Nature Play & Learning Places: Creating and Managing Places where Children Engage with Nature" there is a genuine need in today's society for learning spaces that spark creative play with natural materials, such as plants, vines, shrubs, rocks, water, logs, and other elements. This is the premise of the concept of Nature Play, which is defined as:

Nature Play

"A designated, managed area in an existing or modified outdoor environment where children of all ages and abilities play and learn by engaging with and manipulating diverse natural elements, materials, organisms, and habitats, through sensory, fine motor and gross motor experiences."¹⁵

Nature Play spaces can provide valuable lessons for children, not only in regards to learning their natural environment and appreciation for nature, but also for personal development. These spaces, similar to playgrounds, provide safe spaces to take risks and understand behavioral outcomes. One of the most essential elements in planning Nature Play spaces is to conduct a risk assessment to reduce the unnecessary potential of injury. For instance, natural objects such as logs and boulders may be placed strategically for climbing, but consider where the child might land if he or she were to fall or jump off. Similarly, trees can be used as natural climbing features, with consideration to removing shrubs and nearby smaller trees below. Nature Play can happen in forest-based schools, play zoos, gardens, and summer camps.

¹⁴ Moore, R. (2014). Nature Play & Learning Places. Creating and managing places where children engage with nature. Raleigh, NC: Natural Learning Initiative and Reston, VA: National Wildlife Federation

¹⁵ Moore, R. (2014). Nature Play & Learning Places. Creating and managing places where children engage with nature. Raleigh, NC: Natural Learning Initiative and Reston, VA: National Wildlife Federation

Older Adults and Senior Programming

Many older adults and seniors are choosing to maintain active lifestyles and recognize the health benefits of regular physical activities. With the large number of adults in these age cohorts, many communities have found a need to offer more programming, activities, and facilities that support the active lifestyle this generation desires.

As Baby Boomers enter retirement, they will be looking for opportunities in fitness, sports, outdoors, arts and cultural events, and other activities that suit their lifestyles. Boomers are second only to Generation Y and Millennials in participation in fitness and outdoor sports.¹⁶

Boomers will look to park and recreation professionals to provide opportunities to enjoy many life-long hobbies and sports. When programming for this age group, a customized experience to cater to the need for self-fulfillment, healthy pleasure, nostalgic youthfulness, and individual escapes will be important. Recreation trends will shift from games and activities that boomers associate with senior citizens. Ziegler suggests that activities such as bingo, bridge, and shuffleboard will likely be avoided because boomers relate these activities with old age.

Public parks and recreation agencies are increasingly expected to be significant providers of such services and facilities. The American Academy of Sports Medicine issues a yearly survey of the top 20 fitness trends.¹⁷ Whether it's Silver Sneakers, a freestyle low-impact cardio class, or water aerobics, more Americans are realizing the many benefits of staying active throughout life. According to the National Sporting Goods Association, popular senior programming trends include hiking, birding, and swimming.

¹⁶ Physical Activity Council, 2012 Participation Report, 2012.

¹⁷ American College of Sports Medicine, "Survey Predicts Top 20 Fitness Trends for 2015", <http://www.acsm.org/about-acsm/media-room/news-releases/2014/10/24/survey-predicts-top-20-fitness-trends-for-2015>, accessed January 2015.

Outdoor Fitness Trails

A popular trend in urban parks with trail use for health, wellness, and fitness activities is to install outdoor fitness equipment along the trails. These kinds of exercise stations have been modernized to withstand weather and heavy use. These can be spaced out or a more popular option is to cluster the fitness apparatus just off the trail with a peaceful and pleasing view of nature or playgrounds.



Figure 3.22: Fitness Trail

Outdoor Recreation Trends by Ethnicity

The Outdoor Foundation tracks Americans' outdoor recreation habits and aspirations. According to the 2017 Report:

- Participation among Asians has increased by 1.2% over the past five years while Caucasian participation has declined by 0.9%.
- Black and Hispanic participants went on the most average outings per participant.
- Running was the most popular outdoor activity for almost all ethnicities' however, Caucasian participants participated in fishing at a higher rate than running.

Most Popular Outdoor Activities

1. Running/Jogging and Trail Running- 23%
2. Road Biking, Mountain Biking and BMX-15%
3. Hiking- 13%
4. Car, Backyard, Backpacking and RV Camping- 11%
5. Freshwater, Saltwater and Fly Fishing- 11%

Ethnicity	Participation Rate in 2016	5-year Average Annual Growth
White	50%	-0.9%
Black	33%	0.4%
Hispanic	48%	1.8%
Asian	51%	1.2%

participation rates among diverse groups by age

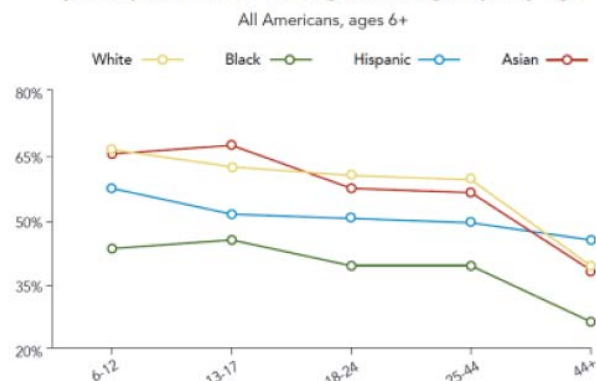


Figure 3.23: Trends in Outdoor Recreation by Ethnicity
Source: 2017 Outdoor Participation Report

Preventative Health

Research has shown conclusively that parks and recreation agencies have a beneficial effect on modifiable health factors by helping to address:

- Increased physical activity
- Enhanced social and parental engagement
- Improved nutrition
- Better transportation and access to facilities and spaces
- Perceptions of personal and community safety
- Reductions of smoking, alcohol, and drug use

These factors can be addressed through collaborations with a variety of community partners, such as schools, public health, medical, other governmental agencies, private and non-profit sectors.¹⁸

'The Benefits of Parks: Why America Needs More City Parks and Open Space,' a report from the Trust for Public Land, makes the following observations about the health, economic, environmental, and social benefits of parks and open space¹⁹:

- Physical activity makes people healthier.
- Physical activity increases with access to parks.
- Contact with the natural world improves physical and physiological health.
- Residential and commercial property values increase.
- Value is added to community and economic development sustainability.
- Benefits of tourism are enhanced.
- Trees are effective in improving air quality and act as natural air conditioners.
- Trees assist with storm water control and erosion.
- Crime and juvenile delinquency are reduced.
- Recreational opportunities for all ages are provided.
- Stable neighborhoods and strong communities are created.

¹⁸ Penbrooke, T.L. (2017). Local parks and recreation agencies use of systems thinking to address preventive public health factors. (Doctoral Dissertation). North Carolina State University, Raleigh, NC. Retrieved from: [http://www.gpred.org/resources/ under PhD Dissertations](http://www.gpred.org/resources/under%20PhD%20Dissertations).

¹⁹ Paul M. Sherer, "The Benefits of Parks: Why America Needs More City Parks and Open Space," The Trust for Public Land, San Francisco, CA, 2006

Riparian and Watershed Best Practices

The ability to detect trends and monitor attributes in watershed and/or riparian areas allows planners opportunities to evaluate the effectiveness of their management plan. By monitoring their own trends, planners can also identify changes in resource conditions that are the result of pressures beyond their control. Trend detection requires a commitment to long-term monitoring of riparian areas and vegetation attributes.

The United States Environmental Protection Agency (EPA) suggests the following steps to building an effective watershed management plan.

- Build partnerships
- Characterize the watershed
- Set goals and identify solutions
- Design and implementation program
- Implement the watershed plan
- Measure progress and make adjustments



Figure 3.24: Riven Rock Park
Source: City of Harrisonburg

Signage and Wayfinding

To increase perception and advocacy, a parks and recreation professional needs to prioritize opportunities that impact the way the community experiences the system. This can start with signage, wayfinding, and park identity. The importance of signage, wayfinding, and park identity to encourage awareness of locations and amenities cannot be understated. A park system impacts the widest range of users in a

community; reaching users, and non-users, across all demographic, psychographic, behavioral, and geographic markets. In a more narrow focus, the park system is the core service an agency can use to provide value to its community. Signage, wayfinding, and park identity can be the first step in continued engagement by the community, and a higher perception or awareness of a park system; which can lead to an increase in health outcomes.

Cary, NC provided samples shown in the following figures of how they chose to implement a cohesive and comprehensive Wayfinding, Signage, and Identity Plan. The key elements are that each sign and wayfinding device provides a cohesive identity that helps residents identify parks and recreation holdings and points to their awareness. In a city of trees, such as Cary, staff believes this has greatly helped resident knowledge and awareness.

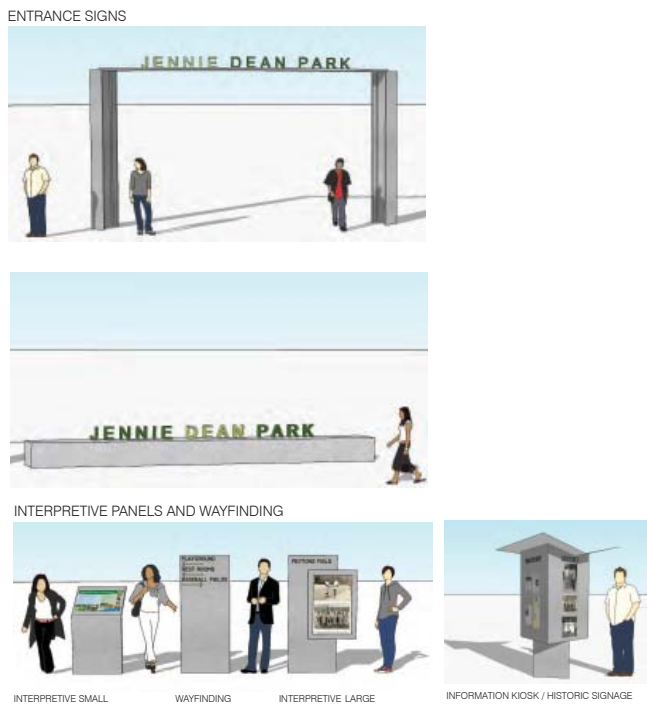


Figure 3.25: Arlington, VA Site-Specific and Community Directional Signage

Splash Pads

Splash pads, or spray grounds, have seen enormous growth in popularity over the past decade. Simply looking at search terms over time (from 2004 to present), Google Trends show that more people are searching for this amenity.

The popularity of splash pads is geographical, and is more common in the West. According to a Feature Article from June 2016 “A Look at Trends in Aquatic Facilities,” splash play areas were least common in the Northeast; only 31.9 percent of responding agencies had this amenity, compared to 55.8 percent of those in the West.²⁰ Urban areas are more likely to have splash play areas than rural areas. This shift is most likely due to the benefits of splash play areas.

Compared to a traditional aquatic facility, splash pads typically incur lower maintenance costs, less programming, and lower staffing costs. Over a third of survey respondents said that they plan to add splash pads to their list of features.

²⁰ Aquatics: A Look at Trends in Aquatic Facilities, Recreation Management, June 2016 <http://recmanagement.com/feature/201606fe03/1>.



Figure 3.26: Splash Pad, Washington, DC

Walk with a Doc

Also popping up in parks around the country are “Walk with a Doc” programs. These programs encourage people to join others in a public park to learn about an important health topic, get a health assessment, e.g. blood pressure and to take a healthy walk along a scenic trail, led by a physician, cardiologist or pediatrician. This is a great way to make the important connection between people, parks and physical and mental health. Cardiologist Dr. David Sabgir created this doctor-patient interactive program in 2004. With physicians ‘walking the talk’, the programs are getting people out in the parks, engaging in healthy physical activity, and reversing the consequences of a sedentary lifestyle “in order to improve the health and well-being of the country.”²¹

²¹ “Does your Doctor Walk the Walk,” <http://flowalking.com/2012/01/does-your-doctor-walk-the-walk/>; <http://www.walkwithadoc.org/who-we-are/walk-information/>, accessed September 13, 2012.

Key Takeaways and Repeated Themes:



POLICY ANALYSIS

Introduction

Good planning is essential to creating desirable communities that serve the long-term needs of their residents. The City of Harrisonburg has adopted planning documents outlining their vision and goals for the development of the city, including Purcell Park. Studying and understanding these documents allows designers to ensure that their plans consistently fit the goals of the city. The following plans will be covered:

- 2013 Comprehensive Parks and Recreation Master Plan Update
- 2017 Harrisonburg Bicycle and Pedestrian Plan
- 2017 City of Harrisonburg Stormwater Improvement Plan
- 2002 Blacks Run Greenway Plan
- 2014 Harrisonburg Downtown Streetscape Plan
- 2017 Harrisonburg Department of Public Transportation Transit Development Plan
- 2018 City of Harrisonburg Comprehensive Plan
- 2019-2020 Through 2023-2024 Capital Improvement Program

2013 Comprehensive Parks and Recreation Master Plan Update

The stated mission of the Harrisonburg Department of Parks and Recreation is “to enhance the quality of life and meet the needs of every citizen by providing comprehensive leisure service opportunities. The department’s mission is also to develop and maintain a safe system of open spaces and public facilities for the use and enjoyment by the community.” The plan noted that in addition to meeting the community’s physical needs, there was a need for greater environmental awareness and innovative programs.

Purcell Park ranked highly on the list of recommended work. It was listed as having the most physical condition issues of any park in Harrisonburg: *“The inventory found that only portions of the park are ADA accessible; the*

parking lot surface requires spot repairs; there is not enough parking during peak use hours; sidewalks and trail require minor repairs; an irrigation system needs to be installed; ball fields need minor repairs; there are some minor cleanliness issues; equipment in the park needs maintenance; the turf is in poor condition and requires renovation; there are areas of standing water; and the hard-surface playing courts need patching and striping. While some issues were addressed, such as removing particularly unsafe areas of the playground, other issues remain. Flooding concerns have grown and continue to deteriorate park infrastructure.

While some priorities have shifted in the intervening years, other major goals and recommendations identified in the 2013 Plan for the Department included:

- Develop an indoor recreation center in the east or south side of the City
- Construct an additional swimming pool
- Develop more Neighborhood Parks
- Support development of a downtown park
- Construct additional soccer fields
- Develop and implement greenways and bike lanes
- Develop walking paths and trails where feasible
- Explore ways to expand and coordinate after school programs
- Ensure that the maintenance group remains well-funded and staffed
- Consider hiring a full-time greenways and trails coordinator
- Determine maintenance responsibilities for greenways
- Continue advancing environmental initiatives and policies
- Undertake periodic surveys to keep track of trends
- Incorporate volunteers into programs
- Coordinate with Economic Development, Tourism and Downtown Revitalization

2017 Harrisonburg Bicycle and Pedestrian Plan

The goal of Harrisonburg's Bicycle and Pedestrian Plan is "to provide a vision and framework for developing an interconnected bicycle and pedestrian network throughout the community." It was developed in reference to the Harrisonburg Downtown Streetscape Plan, the James Madison

University Bicycle and Pedestrian Master Plan, and the Rockingham County and Harrisonburg-Rockingham Metropolitan Planning Organization Bicycle Plans. One accomplishment of the 2010 Bicycle and Pedestrian Plan is that in 2014 Phase 1 of the Bluestone Trail was completed through Purcell Park. This 1.5 mile shared use path is well used and enjoyed by members of the community.

The 2017 Plan has no direct recommendations for new or additional pedestrian or bicycle connectivity to Purcell Park. However, repeated themes and community goals of developing and maintaining a network of streets and paths designed and operated to enable safe access for all users, and using education and encouragement to promote safe walking and bicycling as a form of transportation and recreation should be considered as important aspects of Purcell Park's future.

2017 City of Harrisonburg Stormwater Improvement Plan

The Stormwater Improvement Plan's objectives are to develop a plan to meet Blacks Run/Cooks Creek and Chesapeake Bay Total Maximum Daily Load requirements and associated pollutant reductions in the MS4 permit (a municipal storm sewer permit regulated by the Virginia Department of Environmental Quality), to improve local water quality and address drainage issues where feasible, and to implement such programs in a cost-effective way.

Stormwater Best Management Practices are practices designed to reduce pollution in stormwater runoff. BMPs that reduce flooding without addressing water quality are not included in the SWIP.

Because water in Purcell Park does not flow to or through the City's stormwater infrastructure, the park is located in an unregulated MS4 location. However, the City must still account for baseline loads and the park presents opportunities to improve the City's water quality, since improvements made here will run downstream.

Areas are noted within Purcell Park as opportunities for vegetative filters and bioretention. BMP H31, ranked 48 out of 150 new BMPs, specifically encourages adding bioretention in Purcell Park.

2002 Blacks Run Greenway Master Plan

The Blacks Run Greenway Master Plan was created with the goal of providing a blueprint for an ecologically healthy and recreational corridor along Blacks Run in Harrisonburg. Parts of it have been implemented, such as the Bluestone Trail in Purcell Park and the North End Greenway. The plan speaks to the desire for connectivity, healthy ecological systems and trails systems throughout Harrisonburg.

2014 Harrisonburg Downtown Streetscape Plan

Purcell Park is not within the downtown area. A study of the Downtown Streetscape Plan reveals the city's goals to encourage safe and efficient pedestrian and bicycle transportation, to enhance public transportation use, to provide opportunities for development or redevelopment and to enhance the City's visual character.

2017 Harrisonburg Department of Public Transportation Transit Development Plan

The transit plan outlines improvements that are planned for implementation during a ten-year planning horizon and estimates what resources and funding may be necessary and available to do so. Purcell Park can be accessed by Harrisonburg's Bus Route 4 along South Main Street. Route 4 is a linear route extending from The Cloverleaf Shopping Center to the southern border of Harrisonburg. Route 201 also provides service along South Main Street, and travels in a broad loop over the north of the City. The majority of city bus users walk to their bus stop, and the most frequent use for the bus is to get to school. A variety of conclusions and recommendations are given in the Plan, unrelated to Purcell Park. Bus ridership is not a primary way visitors are currently accessing the park.

2018 City of Harrisonburg Comprehensive Plan

The City of Harrisonburg's Comprehensive Plan presents a long-term vision for the community, serving as a guide for planning and policy making. The major objectives for Parks and Recreation as outlined by the Comprehensive Plan are as follows:

- *Goal 12. To meet the needs of people by providing comprehensive recreation and self development opportunities, both physical and mental, by developing and maintaining a safe, welcoming, well-distributed, and accessible parks and recreation system that also supports community well-being, economic sustainability, and environmental sustainability.*
- *Objective 12.1 To continue to support Harrisonburg's parks and recreation system as a major community benefit.*
- *Objective 12.2 To enhance Harrisonburg parks and recreation facilities and programs to serve the diversity of interests and needs of our community.*
- *Objective 12.3 To develop an interconnected, accessible network of park and recreational facilities through development of a greenway (trails and natural corridor) system.*
- *Objective 12.4 To enhance the appearance, safety, and maintenance of parks and recreation facilities.*

2019-2020 Through 2023-2024 Capital Improvement Program

The Capital Improvement Program is a planning tool that identifies capital projects greater than \$50,000 with appropriate financing to fund them. The Department of Parks and Recreation accounts for less than 1% of the Capital Improvement requests. First on the list of Parks and Recreation's requests is funding to replace Kids' Castle Playground due to serious safety concerns, age-related deterioration and lack of accessibility.

COMMUNITY OUTREACH



INTRODUCTION

Community input from a representative portion of the community is imperative to ensuring equity and to the success of recommendations. During the development of this plan, our team has endeavored to engage stakeholders, community members and park users from all over the City in a variety of ways.

The team conducted four community focus groups drawing from individual users and groups, advisory boards, neighborhood associations, other service providers (public, private, non-profit, etc.), and primary stakeholders such as youth, seniors, other recreation providers, citizens with disabilities, school officials, and other stakeholders. Over 110 participants informed the planning process by giving their input on the park. A staff focus group was also held to understand the goals and concerns of the city.

Seven stakeholder interviews were held with key individuals who contributed specific information in a detailed manner, helping broaden the depth of the team's knowledge and understanding.

A public workshop was held at Purcell Park, focussing specifically on the playground and engaging children as well as other residents with a variety of concerns. The city also reached out to numerous elementary schools and had children send in comments and drawings on what they would like to see at Purcell Park.

Based on the information and feedback gathered from the community, the team worked with the staff to develop survey questions related to the master plan. An invite-only survey as well as an open-link survey were sent out, and enough responses allowed the results to be weighted in a statistically valid manner.

FOCUS GROUPS AND STAKEHOLDER INTERVIEWS

Focus groups, stakeholder interviews and a public forum were conducted during September 4th and 5th, 2019 at the Lucy F. Simms Education Center in Harrisonburg. The goal of these sessions was to gather information that would help the team compose a survey, further refining and quantifying the master plan for renovations and improvements to Purcell Park. Participants included:

- Residents/Park users
- City Staff
- Parks and Rec Advisory Board Members
- Representatives from various athletic clubs and organizations
- Representatives from various community service organizations
- Representatives from various environmental and trail-use groups
- Representatives from Schools and Universities
- Representatives from Community Development, Economic Development, Commerce and Tourism
- State Representatives from Departments of Forestry and Game
- Local youth

A summary of responses follows. Responses are not prioritized. It should be noted that some participants chose not to respond during the sessions.

Years Participants have been a resident of the City of Harrisonburg

18.8% <5 years
12.3% 5-9 years
26% 10-19 years
27.5% 20+ years
15.2% Not a resident but use programs/facilities

How often Participants use Purcell Park

12.2% daily *some are daily use in summer only
15.6% weekly
39% monthly
24.3% occasionally
8.7% We don't use Purcell Park

Activities Purcell Park is currently used for

- Trail Use: running, walking, biking, alone and in groups, with children and/or with dogs
- Pavilion Use: Picnics, parties, reunions, clubs, etc
- Sports: baseball, softball, tennis, basketball, football, soccer, sledding
- Fishing
- Enjoying Nature
- Playground Use

Strengths of Purcell Park

- Size and location: large and central
- Multiple types of athletic opportunities
- Trails: length, variety of experience
- Presence of the stream, natural beauty, mature trees
- History and community connection
- Unique playground with community ties
- Presence of the fishing pond
- Picnic shelters
- Clean and well kept, feels safe

Weaknesses of Purcell Park

Flooding

- Overruns trails, stops activities
- Smells bad
- Creates maintenance issues on bridges and trail surfaces
- Shuts down baseball/field sports
- Can overrun playground
- Causes issues with other water utilities by flooding the sewer intercept

Playground

- Makes supervision difficult
- Only for a small age group: doesn't serve young children or older kids very well
- Bee and wasp concerns
- Safety hazards with pinch points, nails, and rough wood
- Not fenced
- Not as accessible as desired



- Not easy to maintain, experiences flooding
- Access and Parking**
- Not enough parking during games or events: much informal parking happening on the grass and at neighboring businesses
 - Needs interior park wayfinding signage, park is compartmentalized. People don't know where to park, where the fields or shelters are. Trails also lack signage indicating lengths and connections.
 - Access from Main Street is unclear, does not encourage new visitors. Lack of park presence.

Accessibility

- Not all trail surfaces are accessible
- Needs more accessible seating
- Picnic shelters are lacking accessible connections
- There is a lot of interest in the pond and fishing activities for those with mobility challenges, but cannot access it well as is

Other

- All sports users except basketball request more space to play
- Restrooms facilities
- Water quality in the pond
- Lack of utility connections (water/lighting)
- Lack of updated amenities

Additional Activities Desired

Athletics and recreation

- More soccer, baseball, tennis
- Outdoor fitness equipment, adventure course
- Volleyball, mini golf, futsal, rock climbing, frisbee golf, bocce, badminton, gagaball, foursquare, biking
- Hammock field, open space for yoga
- Dog park
- Different kinds of children's play, for a wider

range of children

Arts and Events

- Event space for music, festivals, gatherings, movies
- Picnic and group gathering spaces

Nature and Gardens

- Opportunities for play in natural settings
- Experience of garden and sensory stimulation
- Physical connection to the stream
- Quiet contemplative opportunities

Additional Amenities Desired

Athletics and recreation

- Renovated playground that is safe but also unique and imaginative
- Splash pad
- Upgraded baseball facilities: bleachers, backstops, dugouts, scoreboards, concessions
- Upgraded tennis: maintenance, resurfacing, lights, reservation system
- Corner and goal posts for informal soccer use
- Bicycle repair station, bike racks
- Storage for athletics and park maintenance
- Outdoor fitness equipment, adventure course
- Facilities for: Volleyball, mini golf, futsal, rock climbing, frisbee golf, bocce, badminton, gagaball, foursquare, biking
- Hammock field, open space for yoga
- Dog park
- Access to pond, improvements to water quality

Arts and Events

- Amphitheater
- More small and large picnic shelters
- Barbeques and fire pits
- A shelter/pavilion that can be used for things besides picnicking
- Public Art, sculpture, something unique for the city

Nature and Gardens

- Sensory garden, children's garden, natural play space
- Nature Center
- Pollinator/butterfly garden, herb garden
- Making a connection to the stream
- Quiet contemplative spaces

Other

- Restrooms
- ADA access, to shelters and pond
- More benches and seating
- Water access
- More parking
- Pet stations
- Lighting on trails and in parking lots

- Integrated apps and wifi
- Trail signage, interpretive signage, wayfinding signage, entrance signage, maps
- Connectivity to surrounding neighborhoods

Underserved Community Members

- New residents, especially immigrants and refugee populations
- Mobility impaired
- Those without access to motor vehicles
- Youth ball players

To Bring More People to the Park

Access

- Visibility, connectivity from main roads
- Signage
- Parking

Events

- Performances
- Movies
- Festivals, themed events based on holidays or activities
- Community service projects
- Educational opportunities, field trips

Other

- Soccer
- Restrooms
- Adventure and/or fitness area
- Wifi

Key Partners

- Schools and Universities
- Community Service groups
- Churches
- Local Businesses
- Trail and Biking Advocate Groups
- Environmental Associations
- Athletic Associations
- Parents, residents and neighbors



Key Issues and Values the City Needs to Consider

- Diversity, inclusivity, welcoming nature and friendliness of the City
- Quality of life: having an active lifestyle tied to nature within the City
- Safety
- Continued growth, as evidenced by a new high school and Interstate expansion
- Everything is in the flood plain
- Enjoyment of recreation and sports

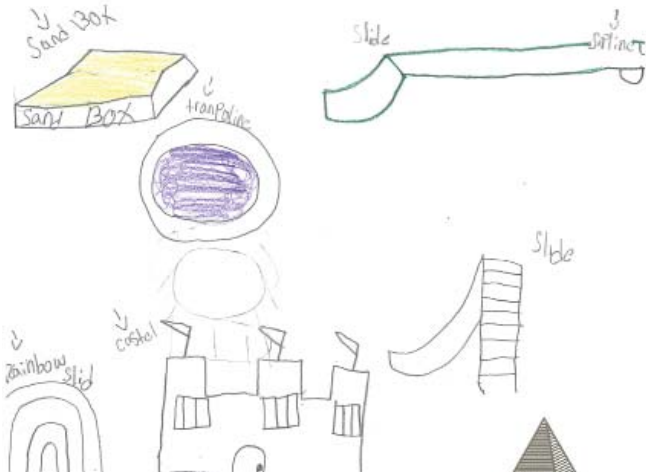
Priorities the City Needs to Consider

- Inclusivity for various ethnic, economic and age groups
- Space for families, children and youth
- Sustainability
- Accessibility for the mobility impaired
- Entertainment (meaning performance or event type) gathering opportunities to build community
- Flooding will continue. Make sure you can maintain what you build.
- Preserving nature and having nature programs
- Access and flooding are considerations when planning new amenities
- Imaginative and unique aspect of playground is important.
- Evaluate potential effects of new amenities on the neighborhood

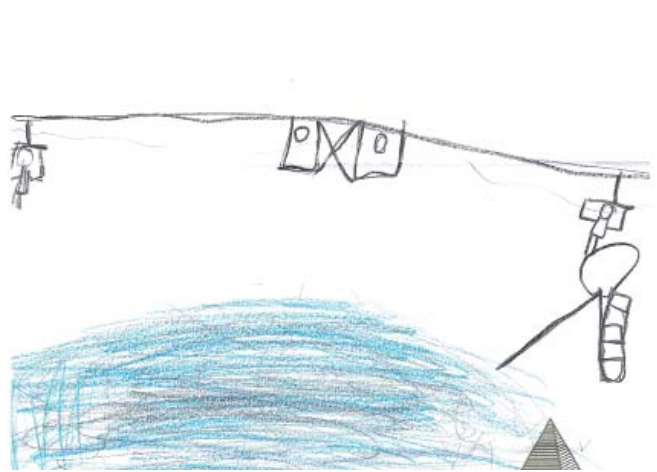
Other Suggestions

- Playground is unique and special, history must be respected.
- Community wants to maintain a connection to the past, nostalgia is important
- Imaginative play is a unique aspect of the park
- There is a need for more ballfields and sport amenities, but this may not be the right location for them due to long-term flooding and parking concerns. The community would be ok with the idea of moving them as long as they were assured of quality and felt their needs were being met.
- Harrisonburg has a lot of parks, every park doesn't need to offer the same things. Purcell should have a unique identity.
- There are potential access and parking connections to be made off of Main Street.

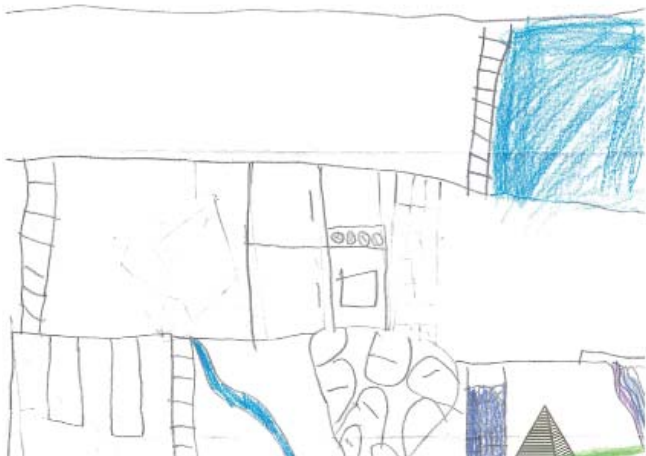
Juliana's
At My Playground I Would Have:
(Draw Your Idea Here)



Diana's
At My Playground I Would Have:
(Draw Your Idea Here)



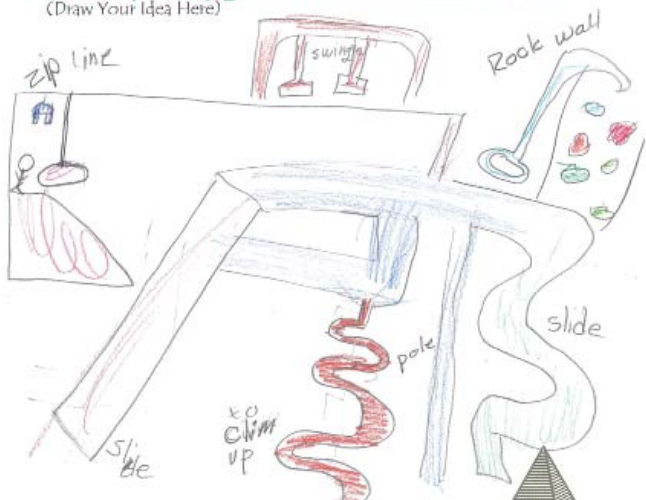
Bentley
At My Playground I Would Have:
(Draw Your Idea Here)



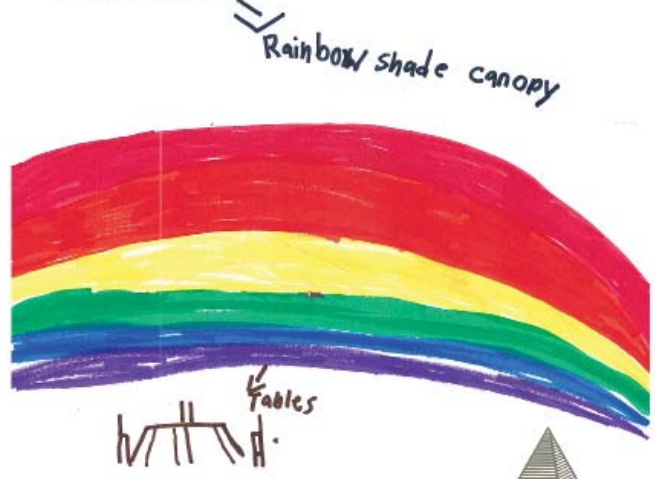
Name: Maritza
At My Playground I Would Have:
(Draw Your Idea Here)



Kenny D.B.
At My Playground I Would Have:
(Draw Your Idea Here)



Laby
At My Playground I Would Have:
(Draw Your Idea Here)



PLAYGROUND OUTREACH



During the public engagement process great efforts were made to engage local children and get their input on playground design. Questionnaires and drawing sheets were passed out to children at a playground design workshop held at Purcell Park on September 19th. Drawing sheets were also given to various elementary and middle school classes, as well as after school clubs, including:

- Keister Elementary School
- Spotswood Elementary School
- Waterman Elementary School
- Smithland Elementary School
- Skyline Middle School
- Thomas Harrison Middle School
- Stone Spring Elementary Boys and Girls Club

“Best Playground in the whole world.”

Hundreds of responses were gathered. Overall, the children enjoyed the castle theme with its tunnels and towers. They liked that it was clearly a kid’s space. There were many requests to add unicorns and/or dragons. Children liked the size of the playground, and their ability to play hide and seek and imaginative games.

As much as they liked the park, they did have struggles playing on it. Children repeatedly asked for slide material not to be metal – saying it is far too hot in the summer. There were a high number of requests for playground materials other than wood. Kids complained about splinters and nails

sticking out, and asked for materials that would not hurt their hands. There were many, many requests for more color. Many kids requested rubber surfacing instead of mulch.

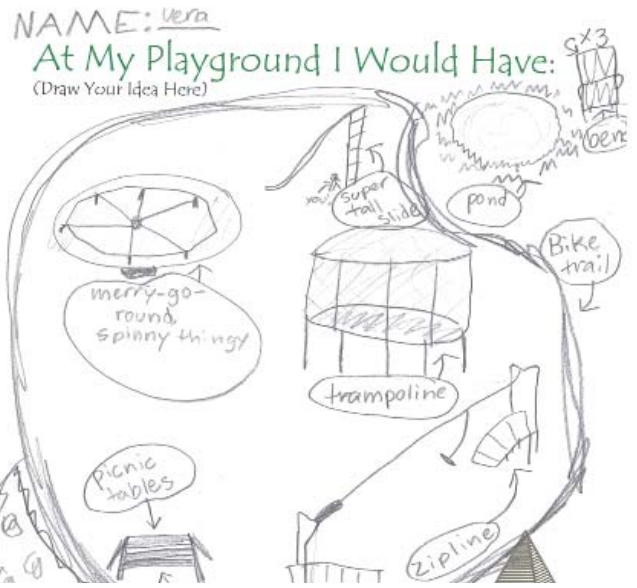
The children had many unique ideas, and many repeated themes associated with what they enjoyed and desired in a playspace.

Some of the most popular activities children noted enjoying and desiring at parks were:

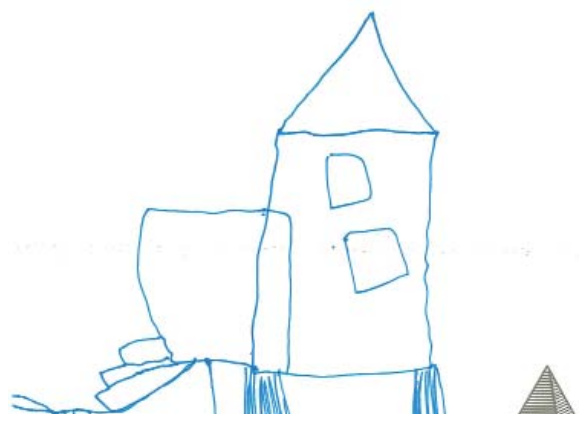
- Swings
- Tire Swings
- Monkey bars, both high and low
- Slides – single, multiple, tunnel, curving, straight, tall
- Ziplines and skyriders
- Sports. Many kids requested the ability to play basketball closer to the playground. In addition, soccer, football, volleyball, gagaball and baseball were repeatedly noted.
- Many, many requests were for more trees.
- Hide and seek and imagination games

Other highly popular requests were:

- Trampolines and bouncy houses
- Spinning things, such as merry go rounds, and roller coasters
- Requests for water elements, from full on water parks to pools, splash pads and sprinklers.
- Trails for biking, skating on scooters and roller blades



At My Playground I Would Have:
 (Draw Your Idea Here) This is a tree-hows



At My Playground I Would Have:
 (Draw Your Idea Here)

I want a sugar candy castle.
 I want to have swings.
 I want a slide.
 I want a plane with a rudder and seats.

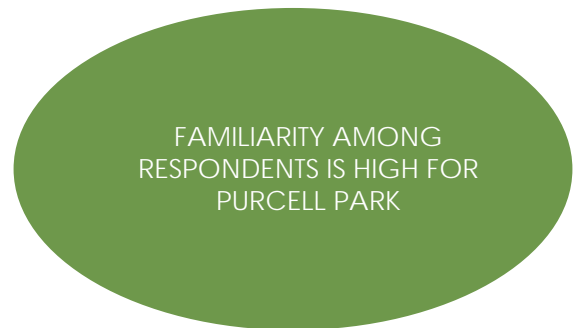
COMMUNITY SURVEY

The focus groups, stakeholder interviews and on-site workshops were essential to getting a broad understanding of the issues of concern to the local community. Information collected was compiled and used to create a survey.

The first survey distribution was invitation-only, mailed to randomly selected residents with an invitation to return the survey through the mail or to participate online with a unique code. This allowed a statistically-valid analysis to be run, ensuring appropriate representation across the City's demographic cohorts. The invitation survey was mailed to 3,500 residents and 384 responses were received.

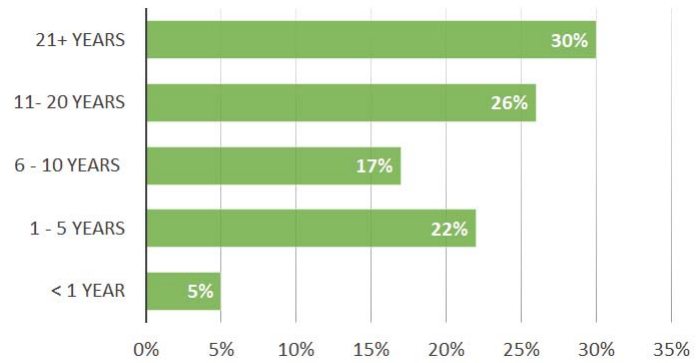
After the initial survey distribution, an open-link version of the survey was posted online. The link was advertised widely throughout the City, across social media platforms and at various events. 616 open-link surveys were completed.

The invitation survey was mailed October 14, 2019 and the open-link survey was opened on November 5th. Survey responses were closed at the end of November.

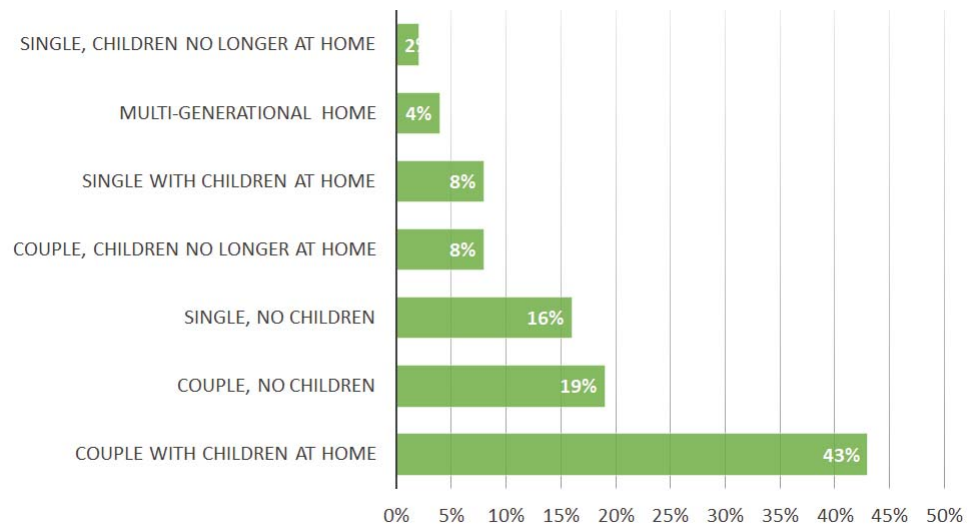


- Approximately 79% of invite respondents rate their familiarity with Purcell Park either a 4 or a 5 out of 5. Another 12% are moderately familiar, giving a rating of 3 out of 5. Only 9% are not familiar, rating either a 1 or a 2.

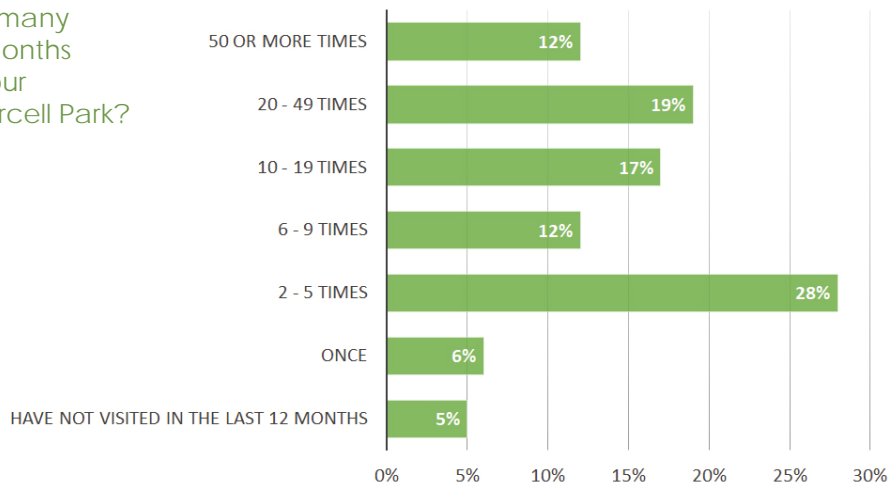
How long have you lived in Harrisonburg?



Which of these categories best applies to your household?



Approximately how many times in the last 12 months have you and/or your household visited Purcell Park?



TRAILS, ENJOYING NATURE, THE CURRENT PLAYGROUND AND PICNIC SHELTERS ARE THE MOST IMPORTANT AMENITIES AT PURCELL PARK.

- Trails are continually noted throughout the report as very important and critical to the future of the community. Residents clearly desire more connected paths throughout the city.
- "Since children grown, don't use much myself besides Purcell Park for walking trails." -Invite respondent.
- "Purcell Park has evolved in a positive way over the years. The walking trails are our reason to go to Purcell but not often enough, as it's a drive and it's always easier to just walk out of the house and go to closer parks on foot. However, Purcell is a very nice place to walk on occasion." -Invite respondent..

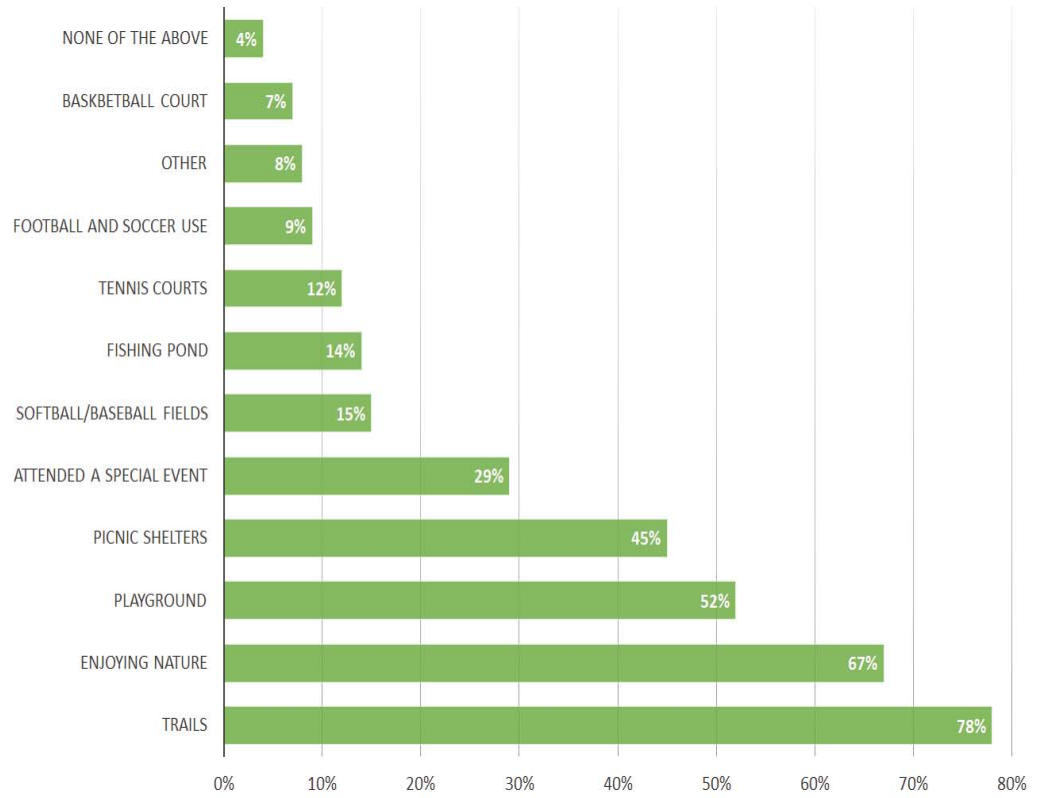
FLOODING AT PURCELL PARK AFFECTS MORE THAN HALF (52%) OF OVERALL RESPONDENTS SOMEHOW.

- Approximately 32% of overall respondents had to modify their activities around flooded areas at Purcell Park. Two in 10 people who responded were unable to use the park because of flooding.
- "The flooding ruins a large chunk of baseball/ softball season with few to no make up days." -Open Link respondent.
- "Purcell Park may be a good option after flooding issues are addressed. The downtown is too hot, with all that blacktop." -Open Link respondent.

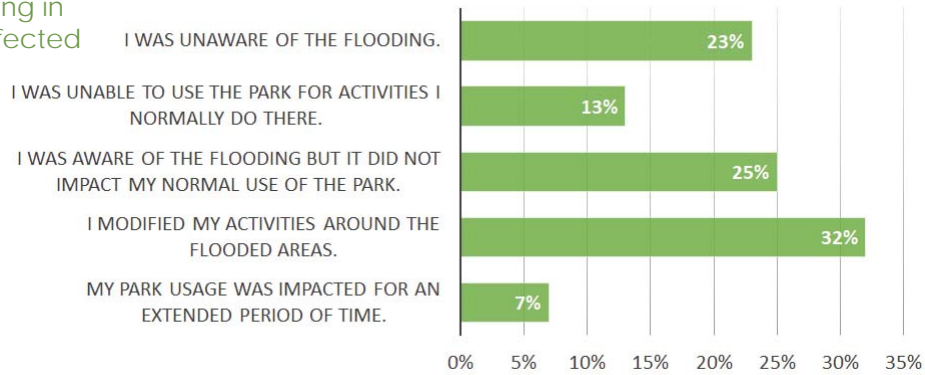
THE HIGHEST PRIORITIES TO BE ADDRESSED AT PURCELL PARK ARE UPGRADES/IMPROVEMENTS TO PARK AMENITIES, UPGRADES/IMPROVEMENTS TO THE CURRENT PLAYGROUND, ADDITIONAL TRAIL CONNECTIONS, AND ADDRESSING THE FLOODING ISSUES.

- Year-round restrooms are by far the most desired amenity that is not currently offered at Purcell Park.

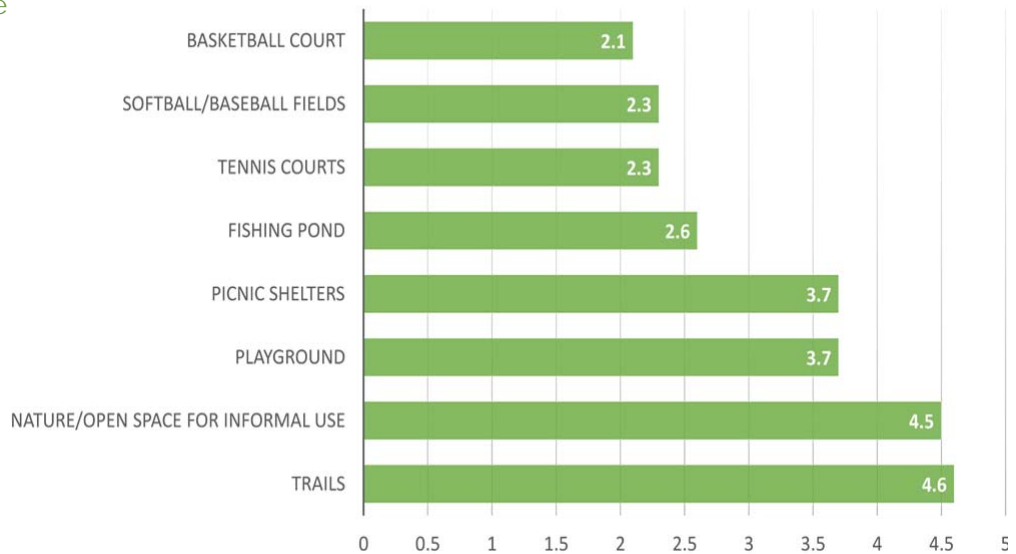
Which Purcell Park amenities are used by you and/or your household?



How has flooding in Purcell Park affected you?

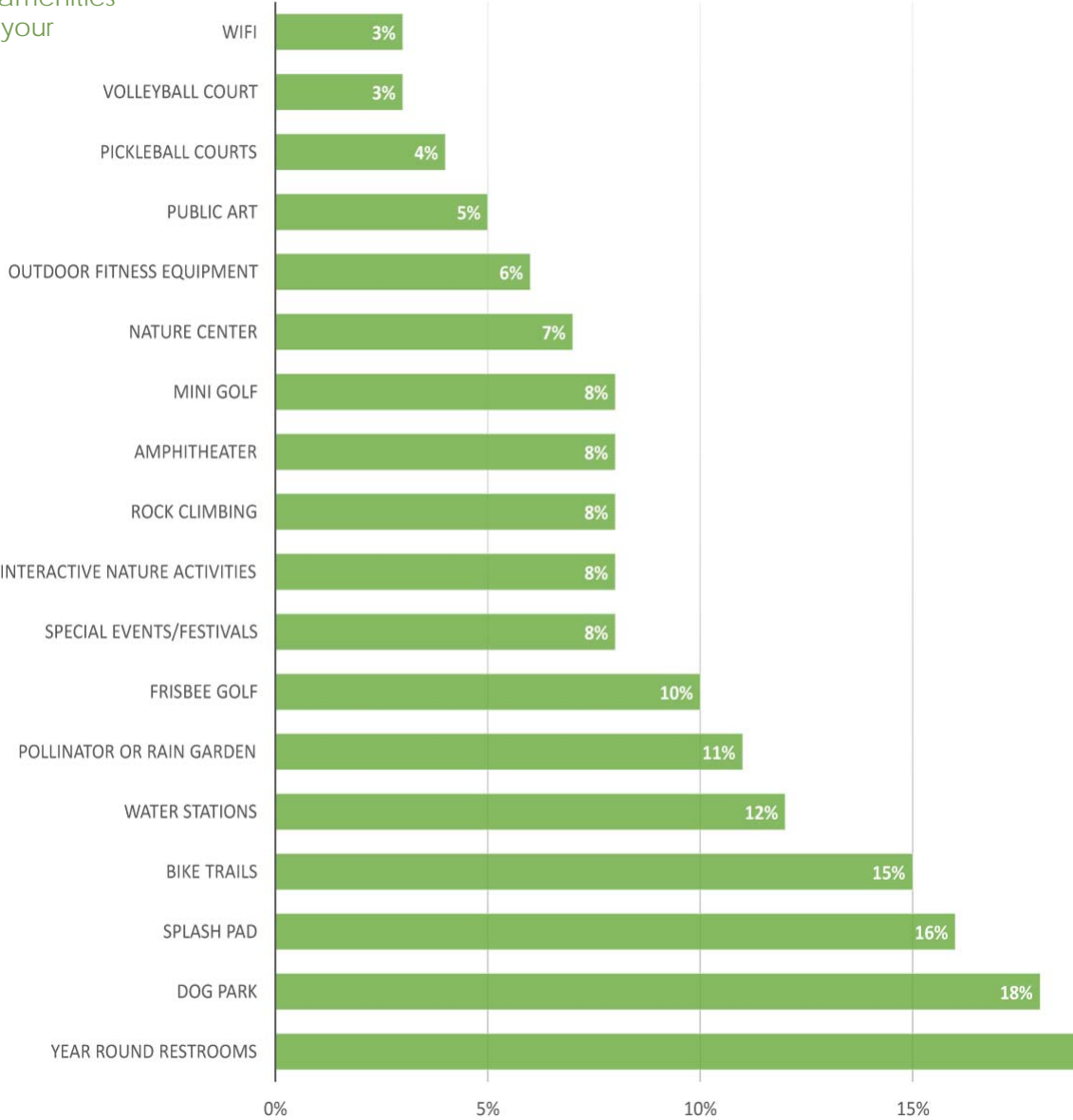


How important are the following amenities at Purcell Park to your household?

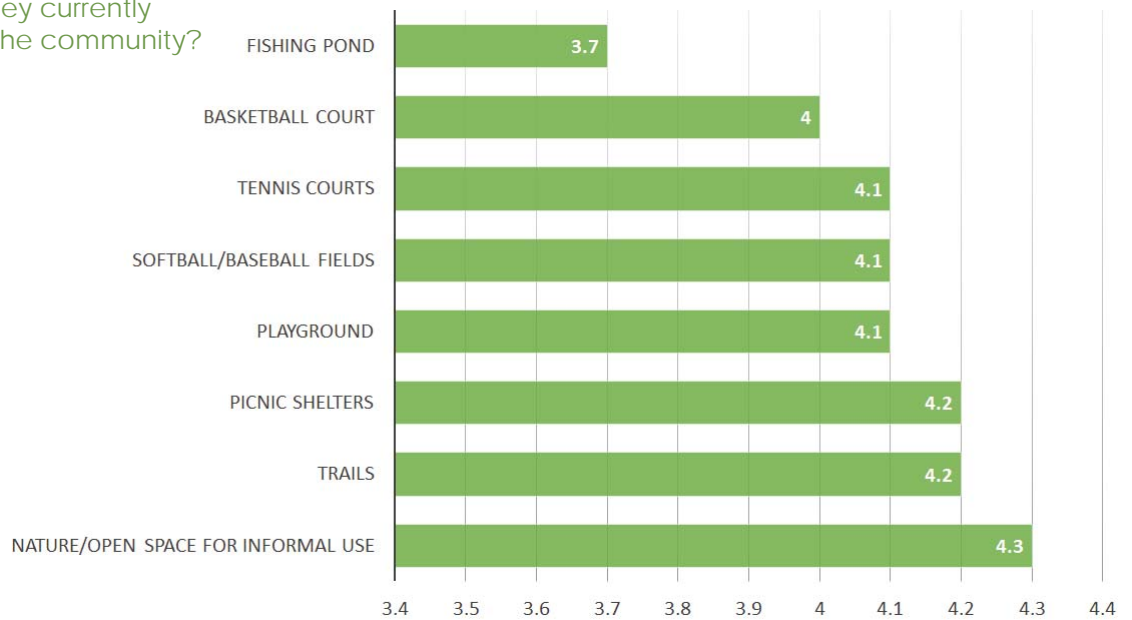


"I have truly enjoyed and appreciated Harrisonburg Parks and Rec, and I think overall you all are doing an outstanding job. I think our city has WAY more parks, activities, and facilities than I would expect from a town of our size. It's very affordable and family-oriented, and has improved our quality of life as residents for years. Keep pressing for excellence, and keep up the good work!: -Open Link Respondent

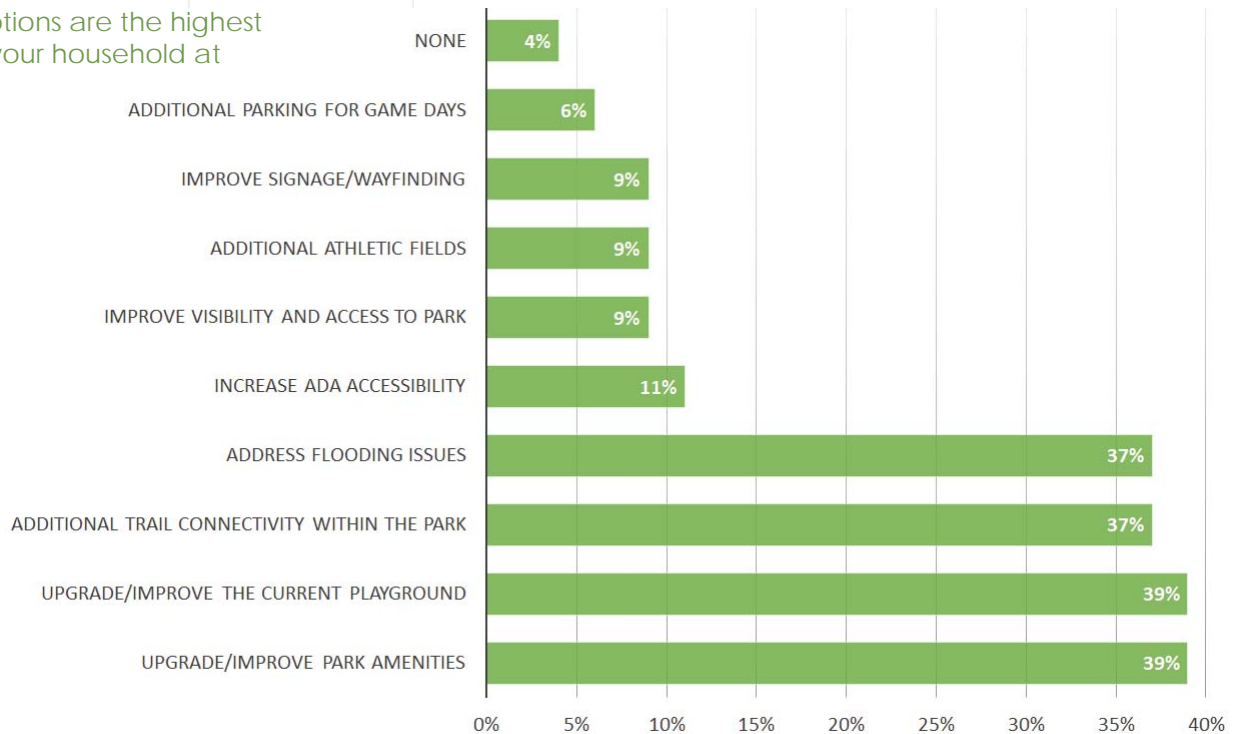
Which two future activities/amenities are the highest priorities for your household at Purcell Park?



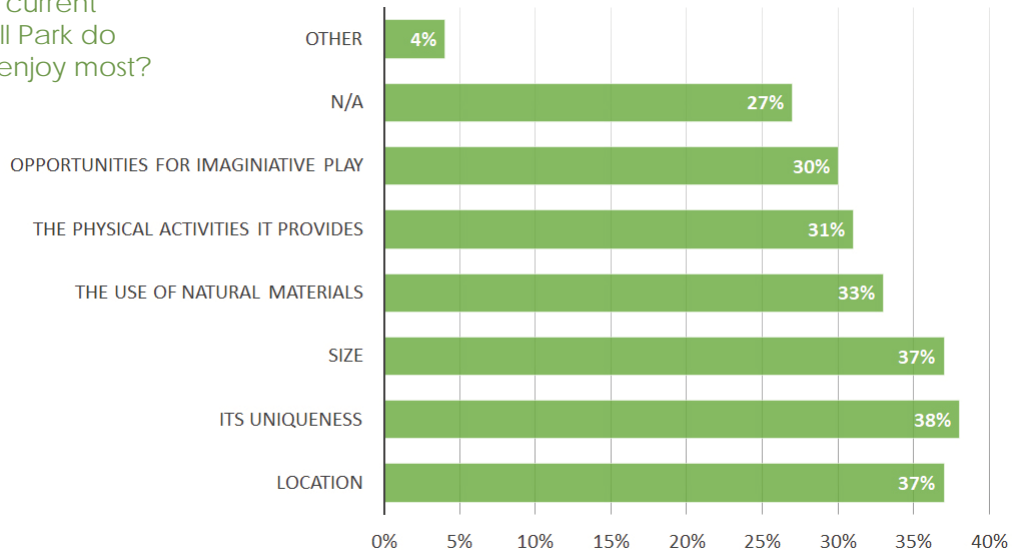
How do you think they currently meet the needs of the community?
(5/meeting needs)



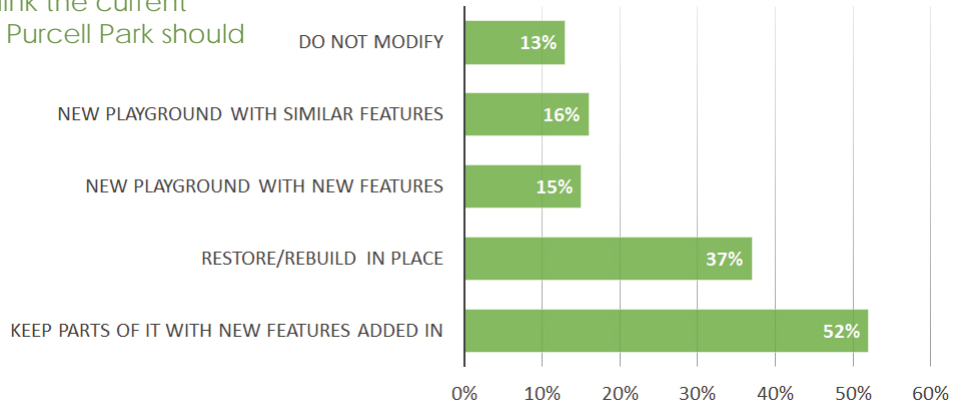
What two options are the highest priorities for your household at Purcell Park?



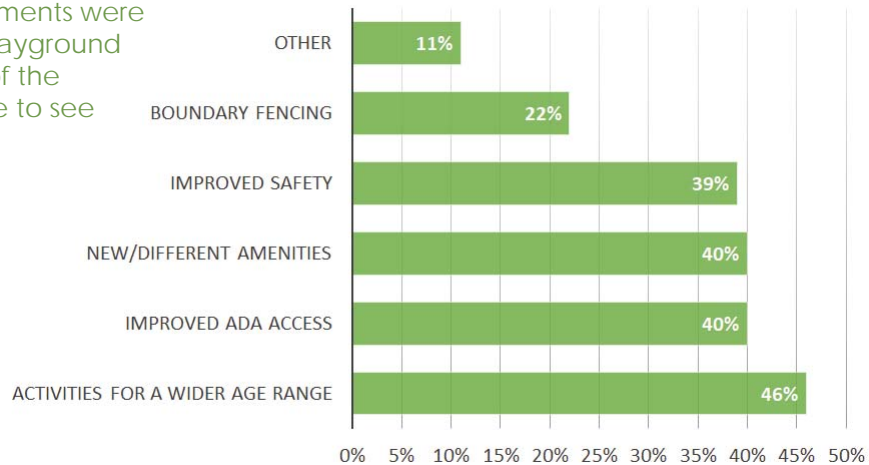
What qualities of the current playground at Purcell Park do you and your family enjoy most?



How do you think the current playground at Purcell Park should be modified?



If upgrades or improvements were made to the current playground at Purcell Park, which of the following would you like to see added or improved?



KEY FINDINGS AND PROGRAMMING

KEY FINDINGS



Key Findings and Program Development

LSG’s Master Planning Process relies on the three-legged stool approach that includes understanding what the site can support, what the community desires and understanding City’s goals and objectives. A summary of these three components form the basis of the park program and Master Plan. The following summary was presented at a Parks and Recreation Commission meeting in December 2019.

The Site



Based on the extensive analysis of the site and its hydrology, it is clear that a unique site design approach is necessary for this park to overcome flooding issues. The frequency of the flooding is increasing and preventing people from enjoying this valuable asset. The team’s goal is to acknowledge the existing natural systems and propose a strategy that works with the natural systems.

The three main aspects of the current system influencing our planning are:

- The floodplain: almost the entire park is in a 100-year floodplain, and the park experiences flooding in even minor rain events.
- The influence of elements outside the park boundary: Stream crossings such as roads and bridges appear to have significant impacts on the flow of water during large rain events. Our analysis shows the stream crossing immediately south of Purcell Park may be creating a bottle neck effect during major storm events. This may be contributing to the water backing up and flooding the park.
- The flood depth: while most of the park gets flooded, the depth of flooding varies considerably and should be carefully considered when developing facilities.

Our strategy consists of employing multilayered ecological interventions, with diverse, scalable elements that can help Purcell Park avoid disruptions during normal rain events and at the same time recover more quickly from extreme rain events. Our multilayered systems approach consists of five parts.

Stream Buffer: Maintaining a healthy buffer area along Blacks Run is critical to avoid stream bank erosion, and provide filtering of water as it enters the stream. The buffer also provides critical habitat for wildlife. The City has already been working towards this and the master plan aims at strengthening the buffer with more native plant material. Any trees needing to be removed during the construction of masterplan elements will be replaced on a 1:1 basis.

Stormwater Management: Implementing best management practices for any new construction the master plan is proposing. This will help with prevention and/or reduction in water pollution from surrounding parking lots, roof drains and other impervious surfaces.

Floodplain Reconnection: Floodplains provide great benefits, from absorption capacity for floodwaters to providing valuable habitat for plants, birds, and other species. One of the goals of the master plan is to identify areas that can be regraded in such a way that when the stormwater reaches top of the stream banks it will enter these floodplain reconnection areas first instead of other park amenities. The areas identified on the master plan are areas along the stream that flood on regular basis, but they are not being used to their full capacity as a floodplain. The floodplain reconnection strategy acts as sponge for the

flood water by protecting other park areas. It will also provide opportunity for native plant material and habitat.

Future Planning: Ensuring that no new facilities and amenities in the park are developed without a clear understanding of its underlying natural system. For example, the ballfields on the west side of Blacks Run get flooded several times a year. With increasing urbanization, this area is bound to experience more flooding in future. It is imperative that the ballfields are moved to higher ground, so the investment in the development of these amenities is protected and the new facilities can be used more effectively. Similarly, if there are active recreation amenities in the park that absolutely need to remain in the flood prone portion of the park, then those amenities should be raised above the flood level while making way for the flood water in a more sensible way.

Education: LSG’s master plan views this park as a great tool for educating the future generations about ecology of Blacks Run, the importance of stream buffers, floodplains and native plant materials. The master plan makes conscious efforts to allow park users to experience the strategies mentioned above and learn about them through interpretive signage. In a sense the goal is to help reveal the ecology of the park and natural systems that make our environment, by creating opportunities to instill love for nature and spark curiosity in the minds of the future generations.

The Community



Harrisonburg residents and the Purcell Park community are passionate about the park. This is evident in the enthusiastic participation of the community during workshops and community meetings. The goal of this master plan is to create a road map to bring that community vision into reality. A five-pronged approach in addressing programmatic desires of the community include:

Active Recreation: Purcell Park is home to baseball, softball, soccer and other organized

field sports. Unfortunately, the current park infrastructure is unable to support these programs. For example, the ballfields on the western side of Blacks Run require significant investment to improve the field conditions, dugout areas, grandstand, and concessions. It is also lacking in restrooms and accessibility.

During the Master Plan process the design team explored the possibility of maintaining these sports programs in some capacity while dealing with the flooding issues described earlier. To maintaining the sports fields on site and ensure a minimal disruption to the youth programs due to flooding would mean raising the entire field areas by several feet. This would also help protect the other supporting infrastructure from flood events. However, such massive grading changes are costly and may result in flooding of other areas in the park or community.

Splash pads, or spray grounds, have seen enormous growth in popularity over the past decade. 16% of the survey responders asked for splash pad at Purcell Park. However, it is important to note that the city is actively considering development of such an amenity in other parts of the city. For example, the Harrisonburg Downtown Renaissance is working with the city on developing a park in downtown. This park features a good size splash pad.

Providing opportunities for outdoor fitness and active living is an important function of an urban park. Purcell Park is already a home to many running and biking clubs. The Bluestone Trail is a premier trail that is heavily used by community. The goal of the master plan is to enhance this amenity and other amenities along the trail. Outdoor fitness equipment along Bluestone trail would be a great addition to this popular amenity.

The tennis and basketball courts at Purcell are located outside of the flood zone and are well-used. With minimal improvements they can continue to be park assets.

Passive Recreation: The community overwhelmingly appreciates the role Purcell Park plays as an open space. According to the survey, experiencing nature and trails were among the top three amenities that are important to every user of Purcell Park. The goal of the master plan is to maintain and enhance these amenities by way of adding missing trail connections, and realigning some of the trails to improve accessibility. For

example, at least one existing stream crossing does not connect with any paved trail system on either side, and some of the picnic shelters in the park are not easily accessible because of their distance from parking lots, and the lack of paved walkway to carry picnic essentials.

An important aspect of the passive recreation that is currently missing in the park is a garden feeling. Typically, large park systems avoid this because of the perceived maintenance associated with such amenities. However, considering the overwhelming desire of the community, the design team is recommending a few strategically located areas in the park that are more gardenesque in nature. Such areas can be developed as sensory gardens, pollinator gardens, or wildflower garden areas. The plan also identifies areas for meadow planting. Considering the additional resources that may be needed to maintain such areas, the city will need to work with volunteer groups and organizations to provide essential resources towards upkeep of these amenities.

Spaces where dogs can play off-leash are the fastest-growing feature in parks today. Not surprisingly, 18% of the residents who took the survey requested a dog park at Purcell Park. It is the second most requested facility after year-round restrooms. For a successful dog park facility good vehicular and pedestrian accessibility is needed, and a large enough area to separate large dogs from small dogs. In the context of Purcell Park, it is also important to note that pet waste is a nonpoint source of fecal coliform and E. Coli bacteria associated with stream impairments. Many jurisdictions across Virginia are avoiding or prohibiting locating dog parks within a floodplain. Finally, the new dog park facility should not create a nuisance to neighboring land uses. Considerations to these criteria may limit the available land for dog park,

Kids' Castle: The playground at Purcell Park has been a major attraction for most residents of the city. However, the safety concerns associated with this 30-year-old play structure are causing major and recurring maintenance challenges for the City. The master plan envisions a completely new playground that draws inspiration from the history and builds on the imaginative characteristics of the current playground that everyone appreciates. The design process for the playground is discussed in more detail in the following chapter.

Infrastructure: Survey responders overwhelmingly asked for improvements to the existing restroom facilities to make them usable year-round, and lighting along the main pedestrian routes. Requests for renewable energy sources, such as solar power for new lighting, were made by multiple community members and their feasibility should be explored in the design phase. Improving public transportation to the park did not receive much comment, but the design team highly recommends studying this aspect in more detail. Equitable access to parks and open space is very important for a healthy community and making provision for access by public transportation is a critical component.

The FEMA flood profile for Blacks Run shows the downstream bridge leading to the industrial commercial center just north of Stone Spring Road may be a major contributor to flooding within Purcell Park. Improvements to that road connection may reduce swelling on flood waters in the park.

Widening of Interstate 81 is a major project being proposed in Harrisonburg. The widening will be done by the Virginia Department of Transportation, but to the extent possible the City may request an underground pedestrian connection across I-81 to connect residential communities to the east of I-81 with the park.

Improvements to roads and infrastructure south of the park as well as a pedestrian connection under I-81 are beyond the scope of this master plan study. However, this master plan strongly recommends studying these elements, as they may have a huge impact on ability of Purcell Park to provide for future generations.

Arts and Events: Besides being fun, well-managed festivals and events offer a host of economic and social benefits to communities. Almost 45% of the survey responders said that they visit the park for picnic shelters and 29% said that they visited Purcell Park for a special event. So, Purcell Park is already being considered as a destination for small community events and gatherings. Purcell Park, however, has potential for larger gatherings. The portion of the park west of Blacks Run is relatively quiet and provides a scenic environment for a large-scale event. This portion of the park is accessible from South Main Street, so any large scale gathering will not have any adverse traffic impact on the residential neighborhood to the north and south.

The goal of the master plan is to turn 'open spaces' in the park in to 'places' that are interesting, equitable and attractive settings to meet various needs and facilitate more interaction among the neighborhood residents and park users. One of the simple ways to achieve this is by incorporating Public art in the placemaking process. Art and interactive design solutions humanize the built environment and enhance the relationship between people and elements of the natural environment.

The City



City-wide sports and recreation planning: Based on discussions with Little League, the Park and Recreation Department staff, and various other groups and clubs that operate in Purcell Park, it is clear that the lack of proper infrastructure and frequent flooding are major concerns for recurring maintenance and the long-term viability of these sports programs at Purcell Park.

The City has also invested considerable amount of resources at other parks such as the Smithland Road Sports Complex to develop sports fields. If the sports programs are moved to other parks in the city, then the city may be able to reallocate the current resources towards other amenities and potentially towards the new facilities at the park. This will also free up a large amount of space for the much-needed floodplain reconnection strategy.

Policy Analysis: As described earlier, the design team conducted detailed analysis of various planning documents that were adopted by the city. Most importantly, the Parks and Recreation Master Plan document notes that in addition to meeting the community's physical needs, there was a need for greater environmental awareness and innovative programs. The multilayered systems approach described above directly address this stated goal of that Master Plan.

Phasing: The Purcell Park master plan is a long-term strategy and phasing is critical from implementation perspective.

PROGRAM REQUIREMENTS

- Renovate playground area to address safety concerns, allow greater accessibility and inclusivity
- Respect the theme and history of the playground and allow imaginative play to be a key part of future improvements

- Upgrade and increase the number of sports fields, whether here or at another facility
- Create an off-leash dog area outside of the floodplain
- Allow spaces for informal field use
- Improve trail usability and accessibility with surfacing and seating
- Improve accessibility to fishing pond



- Create spaces to absorb stream flooding overflow
- Explore opportunities for elevating areas of the park to remove them from the floodplain (hydraulic analysis and corresponding FEMA approval required)
- Make use of underutilized hillsides for open space
- Create a connection to natural habitat
- Add restful recreation areas and sensory garden

- Add smaller pavilions
- Include art elements, such as sculpture
- Create a park signature space
- Create unique park programming to draw in new visitors

- Upgrade sewer connection
- Plan for overflow parking if expanding the sports programs
- Improve access points and visibility
- Improve ADA access
- Install year-round restrooms
- Install lighting along Bluestone Trail

MASTER PLAN



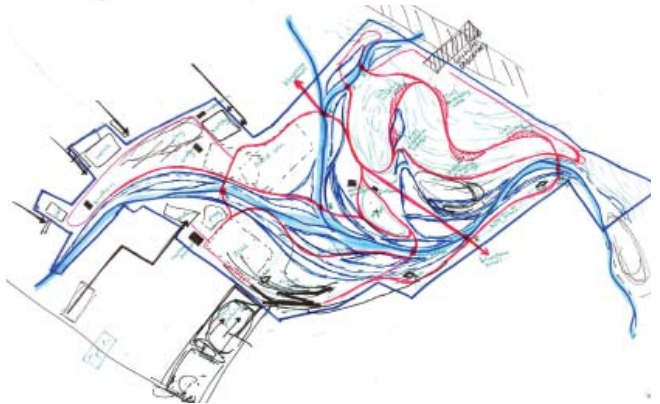
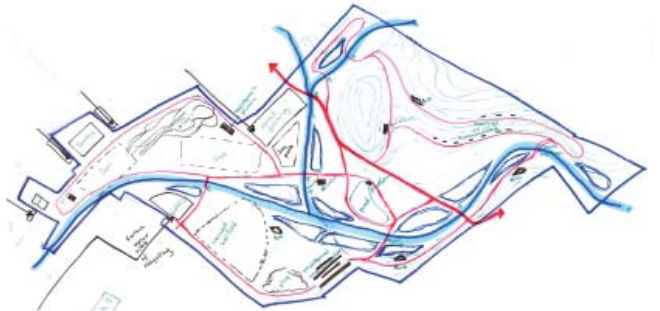
PLAN OPTIONS

The design team developed several master plan approaches. The three main strategies that were explored included:

- Developing the master plan to maintain the park as a neighborhood level park.
- Developing the master plan to make this a city-wide attraction.
- Developing the master plan to transform this park into a regional destination.

Based on discussion with the City staff it was concluded that in order to truly incorporate and provide justice to all the program elements derived through the community engagement process, it was essential that we develop this park as a regional destination with unique features, facilities and amenities that are not necessarily available in other parks.

Based on City's feedback LSG developed two options.



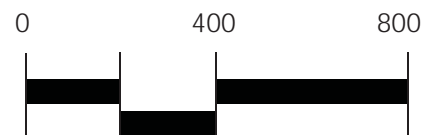
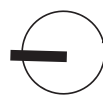
MASTER PLAN OPTION 1

The key assumption in the first master plan option was that Purcell Park will continue to provide for organized sports activities and programs in the future in at least some capacity. This was achieved by providing two large multipurpose open spaces, one in place of an existing baseball field and the other in place of current ballfields on western side of the Blacks Run.

The option also provided a renewed vision for the Kids' Castle area, the hillside portion of the park between the Bluestone Trail and Interstate I-81, as well as for the areas surrounding the pond.

The multilayered systems approach discussed earlier was incorporated in this option by way of stream buffers, BMP for all new developments, floodplain reconnection areas and educational components associated with them.

- ① Floodplain Reconnection
- ② Parking Reconfiguration
- ③ Multipurpose Lawn Panel
 - 3a: 160' x 140'
 - 3b: 200' x 150'
 - 3c: 80' x 45'
- ④ Children's Play Area
- ⑤ Splash Pad
- ⑥ Pergola
- ⑦ Relocated Basketball Court
- ⑧ New Gazebo
- ⑨ Dog Park
- ⑩ New Pergola & Pond Overlook
- ⑪ Waterfall
- ⑫ Overlook Artwork
- ⑬ Terrace
- ⑭ Underpass Connection



MASTER PLAN OPTION 2

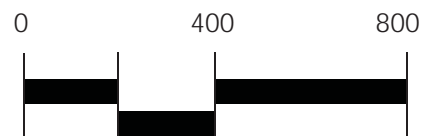
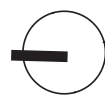
The key assumption in the second master plan option was that major sports programs and activities would be moved out of Purcell Park, possibly to Smithland Road Sports Complex. This opened a host of new possibilities for the park. The option envisioned a large floodplain recreation area on the west side which could also be used as an outdoor gathering and event space. The plan envisioned a couple of picnic shelters, a variety of trails and boardwalks through this area, and at least one additional stream crossing to improve connectivity between the two sides of the park.

Another key difference in this option is the development of a main entrance to the park on its western side. Through the site analysis it was determined that the entrance on this side would be more effective as it provides direct access from South Main Street and has potential to improve public transportation to the park.

The master plan envisions a welcoming arrival sequence between South Main Street and the park, with a roundabout to serve as an easy drop-off and pickup zone for a variety of transportation options including buses. Since this area is comfortably outside of the 100-year floodplain, many other amenities can be explored in this area as well, such as a Welcome Center, additional restrooms, a small nature center, a park rangers' station and a dog park. This area also deserves an additional connection to the other side of the park.

On the eastern side of the stream the plan proposal is similar to Option 1. These include the renovation of Kids' Castle, and the reimagination of areas around the pond and hillside between the Bluestone Trail and Interstate 81.

- ① Floodplain Reconnection
- ② Parking Reconfiguration
- ③ Multipurpose Lawn Panel
 - 3a: 160' x 140'
 - 3b: 80' x 45'
- ④ Children's Play Area
- ⑤ Splash Pad
- ⑥ Pergola
- ⑦ Nature Center
- ⑧ Potential Bus Stop
- ⑨ Dog Park
- ⑩ New Pergola & Pond Overlook
- ⑪ Waterfall
- ⑫ Overlook Artwork
- ⑬ Terrace
- ⑭ Underpass Connection
- ⑮ Raised Walkway and Platform



PLAYGROUND DESIGN OPTIONS

The first important aspect of the playground design was to figure out the location of the playground. Major criteria for the siting of the playground were easy access to parking, restroom, and convenient pedestrian accessibility. In addition, it was important that the playground be located above the flood level.

The only area that satisfied all four criteria was the existing parking lot itself. The current playground is located suitably near the existing parking lot as well as the restroom. It is surrounded by mature trees that provide shade. An asphalt trail on one side provides easy pedestrian connections. The current location does not get affected during 10- year storm event, however it may experience slight flooding for 50 year and considerable flooding during 100-year flood event. Flooding depth during major storm events is up to 3 feet.

The size of the playground was calculated based on amenities requested by the workshop participants, studies of other newly constructed playgrounds in Harrisonburg, and studies of other parks that serve as regional attractions.

Option 1: At first the design team developed an option for siting the playground in place of the existing parking lot. This required relocation of parking further south in the floodplain. It also meant that existing baseball field would need to be relocated somewhere else in the first phase.

Option II: This option maintains the play areas roughly in the same location as the existing playground. Based on the flooding analysis the design team is recommending raising the play area by 3'6" above the adjacent walkway. This will ensure that play areas are not flooded even during the 100-year flood event. This option does not require the city to make any immediate changes to the parking or baseball field.

After careful consideration of costs associated with the two options it was determined that it is best to continue with option II, which is keeping the playground roughly in the same location but raising it above the flood level.

- ① Reconfigured Parking
- ② Existing Restroom
- ③ Existing Picnic Pavilion
- ④ Raised Walkway
- ⑤ Castle Structure
- ⑥ Slides
- ⑦ Children's Play Area
- ⑧ Airplane Play Feature
- ⑨ Floodplain Reconnection
- ⑩ Multipurpose Lawn
- ⑪ Pergola

- ① Reconfigured Parking
- ② Existing Restroom
- ③ Existing Picnic Pavilion
- ④ Raised Walkway
- ⑤ Castle Gateway Structure
- ⑥ Slides
- ⑦ Children's Play Area
- ⑧ Airplane Play Feature
- ⑨ Zipline
- ⑩ Floodplain Reconnection
- ⑪ Multipurpose Lawn
- ⑫ Practice/Projection Wall
- ⑬ Pergola
- ⑭ Firepit

Playground Option 1



Playground Option 2



FINAL MASTER PLAN

The proposed master plan for Purcell Park is a culmination of the entire master planning process encompassing a detailed understanding of the site, the community, and the planning goals of the City of Harrisonburg.

As identified during the site analysis and programming stage, the master plan employs a system of multilayered ecological interventions, with diverse, scalable elements that helps Purcell Park avoid disruptions during normal rain events and recover more quickly from extreme rain events. The master plan takes into account the robust community participation and incorporates program elements that were identified by the community throughout the process. Finally, the master plan creates a road map for the City of Harrisonburg to develop a unique park that functions not only as neighborhood and city park but also as a regional attraction for the surrounding area.

The master plan design acknowledges that most of the park is within the 100-year flood plain. This flooding affects more than 50% of the park users according to the survey. With that in mind, the plan proposes to move some of the active recreation areas to a higher ground within the park. It also recommends in the long run moving some of the sports programs outside of the park when the city has infrastructure developed for those activities elsewhere.

According to the survey results, addressing flooding issues is the second most important priority for the residents of Harrisonburg at Purcell. The master plan maintains the current stream buffer and adds an additional 15 acres of floodplain reconnection to overcome flooding issues. Furthermore, the plan proposes a mix of green infrastructure and utility improvements for the future of the park.

Principal among them are:

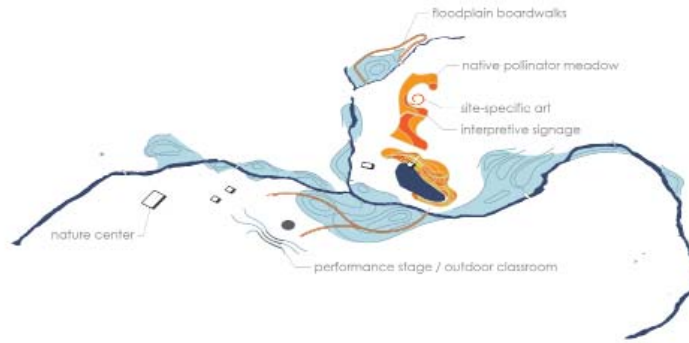
1. Transforming the current restrooms to year-round restrooms.
2. Provision of motion sensor activated lighting along the Bluestone Trail.
3. Reconfiguration of the current parking lot to incorporate bioretention facilities.
4. Parking lot improvements along the secondary entrances to the park.
5. Phase III showcases further improvements to the western portion of the park with the addition of a direct public transportation connection, a new drop-off zone, additional restrooms and improved parking areas.

According to the survey results, using trails and enjoying nature are the two most popular reasons for people to visit Purcell Park. The residents overwhelmingly support the idea of improving pedestrian connectivity within the park and adding to its current network of trails. The proposed master plan is adding over three miles of trails to the current network. This includes asphalt paved trails and connections to the various amenities, boardwalks and gravel paths through the flood plain reconnection areas. Additionally, the master plan recognizes that families with children and senior citizens are a major portion of the park visitors. Opportunities to rest along the trail are incorporated throughout the design in the form of benches, and pavilions.

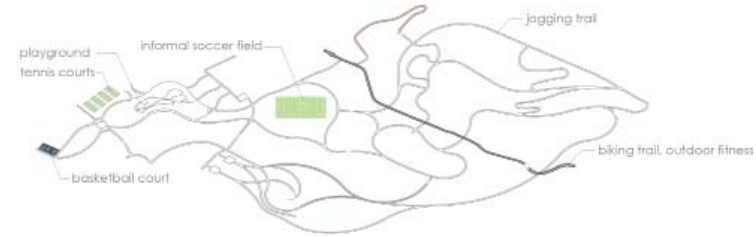


Neabsco Boardwalk, Virginia
Source: LSG

EDUCATION



ACTIVE RECREATION



INFRASTRUCTURE



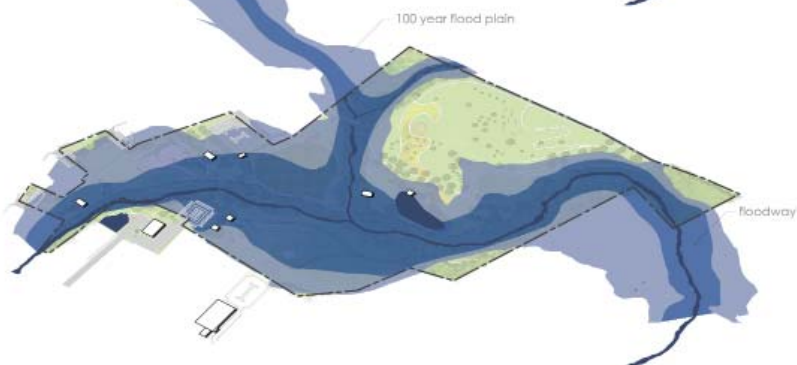
FLOODPLAIN RECONNECTION



STREAM BUFFER



FLOODPLAIN



While the master plan recommends moving some of the sports programs to a more suitable location outside of the park, it has retained and improved the basketball and tennis courts, and made provision for a large multipurpose lawn area for informal sports activities, such as group of friends playing soccer, flag football, frisbee, etc.

Finally, the master plan views this park as a great tool for educating future generations about the ecology of Blacks Run, the importance of the stream buffer, floodplain, and native plant material. This can be achieved by incorporating interpretive signage to talk about a variety of topics of interest.

The proposed master plan represents how the park may look in the future. It provides a road map for how to develop the park in phases. Each phase has a unique aspect or feature that will over time turn this neighborhood park in a popular city and regional attraction.

A few items of community desire were not incorporated into the master plan. During the creation of this plan, the City had already made provision for creating a splash pad and pickleball courts elsewhere in the city. Some items such as mini-golf are simply too development-intensive for a floodplain area.

The design team recognizes that the priorities of the city and residents may change over time and so it may be necessary to revisit the park master plan as the city completes each phase of the park and sets the stage for the next phase. If it is possible to accommodate low-cost items from future phases in earlier efforts, the plan can easily accommodate that.

The key features of each phase will be elaborated in the following pages.



Interpretive Signage
Source: LSG Landscape Architecture





Source: Landscape Structures



Source: Landscape Structures



Source: Landscape Structures

PHASE 1

The playground at Purcell Park was one of the most important aspects of this master plan and one of the major focus areas of the community engagement process. The survey revealed that more than 50% of the people visiting Purcell Park enjoy this amenity in some form. Some visit with their own kids, some with their grandkids, some visit on their own and some visit as they love watching others enjoy this amenity. No wonder that it is the most popular activity in the park after trails and nature and it is the number one amenity that park visitors want to upgrade.

The current playground has too many serious health and safety concerns, as well as being below the 100-year flood elevation. Because of these two issues the master plan proposes to completely remove the current playground and replace it with a new playground facility. Natural materials such as wood are a great way to bring warmth to any structure. However, materials such as wood are not always easy to maintain for longer periods of time.

Kids and parents overwhelmingly like the convenient location of the current playground. They also voted for the unique character and theme, different than other play areas in the city, and the imaginative play opportunities it offers. Many parents also expressed concerns over the lack of range of activities for various age groups and the lack of accessibility for disabled.

The design of the playground area was the direct result of a community engagement process. Based on interaction with kids through workshops and school activities, and through the community survey, the design team learned the program elements that are most sought after by the children. These include tall slides, ziplines, large swings, climbing structures, spinning wheels, a sand box, and musical instruments. Extensive hydrological analysis of the site also played an important role in the design and prompted elevating most of the play area by three and a half feet. This is to ensure that the playground does not get flooded even during a 100-year flood event.

During the community engagement process, people overwhelmingly supported the idea of maintaining the "Kids Castle" as the theme, but many are open to reimagining it to incorporate newer, better, and safer play equipment.



- 1 Basketball Court
- Parking Reconfiguration
- Existing Park Structure
- Shade Structure
- 4 Tennis Courts
- Informal lawn
- Parking Reconfiguration
- Floodplain Reconnection
- Children Play Area
- Existing Trees
- Existing Park Structure
- Parking Reconfiguration
- Existing Restroom
- Bioretention

Many people also wanted to bring back the historic airplane into the playground in some shape or form. However, through the design process it was determined that it is perhaps better not to merge the aviation theme with a traditional castle theme. So, the master plan recommends that an aviation themed play area be incorporated in future phases of the park and the current playground should focus on unified theme of "Kids' Castle."

The proposed conceptual design is imagined as a landscape consisting of a village at the crossing of two rivers and a large castle that towers above this imaginative scenery. The goal of the design is to create a unique sense of place by weaving in the idea of coexisting in harmony with natural systems. In addition to the actual play equipment, the playground offers a variety of features such as streams, mounds, rock outcrops, trees, flowers, bridges all surrounded by natural landscape. Where play equipment contributes towards "Active Play" such as climbing, swinging, sliding, twirling etc., the other features contribute towards creative, imaginative and sensory aspects of the play.

The design pays special attention to accessibility and inclusivity. An inclusivity expert was consulted during the design process to ensure that children of all abilities can participate in every aspect of the playground. Various spaces within the playground are placed in accordance with age groups, creating zones for different age and energy levels. For example, the toddler zone is placed close to the entrance, followed by 2-5-year age group, followed by a higher age group, followed by multigenerational play spaces that can be enjoyed by all. While things are organized per age groups, the design pattern weaves them together making the playground inclusive to every age group and ability.

All play equipment has been placed considering the safety zones around each equipment. The swings and ziplines have the largest safety zone requirements and if made of right material they are least affected by the flooding. Thus, these two activities are incorporated at a slightly lower elevation.

The playground is surrounded by walking and biking trails and walkways. The design also



incorporated a tyke track path or a pedal path loop with small street signs and crossing signs around the playground, and at a somewhat lower level to reduce the chance of collisions. The playground is not designated as fenced in the master plan, but that may be revisited in the design phase.

The design offers plenty of opportunity for parents and caregivers to relax and watch over their kids. Seat walls, benches and covered portions at strategic location offer views of the entire playground. Along with tensile shade structures, the design integrates several trees and landscape elements to provide natural shade. The existing picnic structure will remain, and it is recommended that additional picnic spaces be provided for community use.

In addition to raising the playground, the proposed floodplain reconnection to the west of the playground is an integral part of the strategy to protect the playground and other new improvements from large scale flooding events. This floodplain reconnection area will be planted with native plant material that supports pollinators such as bees and butterflies. The relationship of this feature with the proposed playground design makes it an inviting space for families and is a great place for interpretive signage pertaining to native flora and fauna. Other wayfinding, regulatory and entry monument signage are to be included per the desires of the city.

Other improvements in this phase include upgrading the restrooms for year round use and improvements to the main parking lot off Hillside Avenue. Bioretention areas have been proposed as part of stormwater management strategy. A network of pedestrian connections from the parking lot to the playground improves the experiential quality of the space owing to the playful curvature of these walkways, their integration with the existing tree canopy, and improved connectivity with the existing shelter and restrooms. Currently food trucks are not permitted to visit Purcell Park, but should that change based on city policy and community desires, areas within the parking lot off Hillside Avenue could be designated to facilitate food truck parking.

With the reconfiguration of the main parking lot, the overall parking capacity will be reduced. To compensate for that the two smaller parking lots

along Monument Avenue will be reconfigured for additional parking spaces. This reconfiguration will also improve connectivity of these areas with the park.

To the north of the playground, the reconfigured walkway system creates a feature lawn area that can be used for informal gathering, with a circular gazebo or pergola structure as its focal point. The master plan does not affect the existing tennis facility outside of surface repair. It does propose a 6' tall masonry wall for the two middle courts along their western side. This wall will serve as a practice wall for the tennis courts and could also serve as a screen or backdrop for an outdoor movie event on the park lawn. Alternatively, this wall can be designed to act as a climbing wall from the park lawn side.

At the north end of the park the plan proposes an improved basketball court, pedestrian access to the existing shelter, and an optional parking area off Monument Ave.



Source: Landscape Structures



Source: Kompan

DESIGN FOCUS AREA: PLAYGROUND



Source: Landscape Structures



Source: Landscape Structures

- ① Existing Picnic Pavilion
- ② Raised Walkway
- ③ Shade Canopies
- ④ Castle Play Structure
- ⑤ 2-5 Village Children's Play Area
- ⑥ 0-2 Children's Play Area
- ⑦ Slides and Climbers
- ⑧ Music Nook
- ⑨ Swings
- ⑩ Zipline
- ⑪ Seating
- ⑫ Floodplain Reconnection
- ⑬ Potential Future Picnic Sites





DESIGN FOCUS AREA: PLAYGROUND





SWINGS AND SPINNERS

5-12 YEAR CASTLE PLAY STRUCTURE

SHADE CANOPIES

SEATING AREA

RAISED WALKWAY
CONNECTION FOR
INCLUSIVE ACCESS

SLIDES AND CLIMBERS

DESIGN FOCUS AREA: PLAYGROUND





RAISED WALKWAY
CONNECTION FOR
INCLUSIVE ACCESS

SLIDES AND CLIMBERS

0-2 YEAR PLAY VILLAGE

PHASE 2

The second phase of the park development focuses on five different aspects: The informal sports fields, pond improvements, hillside development, flood plain reconnection, and trail improvements.

The existing softball field will be kept in place until a better facility is developed elsewhere in the city. Upon completion of alternate facility, the area will be transformed into a multipurpose sports field. The work may involve complete regrading of the area to increase its elevation, improvements to the soil profile to increase permeability of the soil, and finally incorporation of floodplain reconnection and bioretention to alleviate flooding issues on the field. A sensory garden is also proposed on the Western side of the proposed field area.

THE POND

Based on the survey, there is a dedicated constituency for fishing at the pond. Fishing is also an activity that has been identified as trending upwards in recent years. Since most of Blacks Run is surrounded by a rather robust vegetative buffer, the pond provides an unique opportunity to access water on the site. Though physical interaction with the water at the pond is not envisioned, the master plan does envision the pond area as one of the major features of the park, to celebrate and enhance recreational access to water on the site.

The plan recommends improving accessibility to the existing fishing pier and replacing that with a large deck area with an overhead structure. Additional fishing access points will be provided on the southern end of the pond, perhaps through the use of naturalistic rock outcroppings. During the community outreach there was a lot of emphasis on experiential quality of the park. Everyone loves the “nature” aspect of the park, but people also wanted to see some areas dedicated as pollinator gardens and sensory gardens. The master plan proposes the transformation of the south side of the pond with a waterfall, rockscape and native plant material. The rockscape could act as informal access to pond for contemplative experience or for fishing. The pollinator garden will create a unique gardenesque effect along that side of the pond.

The north side of the pond is kept relatively simple to avoid any disturbance around the existing tree along the pond’s edge. These placemaking strategies will enhance the natural beauty of the pond and lend the site to new uses such as pollinator education gardens and a destination for photos.

THE HILLSIDE

The eastern side of the park along Interstate 81 features rolling hills. This hillside is one of the few places that is outside of 100-year floodplain. Unfortunately, the rolling topography with major slopes make this part of the site unsuitable for active sports amenities. The master plan takes advantage of the topographic character of the site to introduce passive recreation opportunities, site specific art and to enhance the trail offerings in the park. Part of the hillside has been kept as is to invite activities such as sledding. An artwork and observation deck has been proposed on the top of a knoll revealing an expansive view over the park. As the hills descend towards the stream, bioretention and floodplain reconnections are sculpted through a series of swales to mitigate flooding.



Lansdowne on the Potomac
Source: LSG Landscape Architecture

TRAIL NETWORK

Minor changes to the trail network proposed in this area are as follows:

1. The northern portion of the trail abutting the stream is currently flooded quite frequently, so the proposed plan pulls up that portion of the trail above the typical flood level.
2. A new trail system is proposed that extends from the enhanced pond overlook and winds up the to the knoll and becomes part of the art sculpture. It then continues into



- Informal Rectangular Field
- Floodplain Reconnection
- Sensory Garden
- Boardwalk
- Existing Park Structure
- Floodplain Reconnection
- New Pavilion and Pond Overlook
- Artwork
- Waterfall & Feature Planting
- Sledding Hill
- Floodplain Reconnection
- Knoll Seating



the floodplain reconnection area along the northern portion of the Blacks Run tributary.

3. Along the southern portion of this area the existing trail is very steep and several people during the focus group expressed concern about the steep slopes and sharp curves. An additional winding and gently sloped trail has been proposed. This trail also provides access to the proposed open-air terraces and seating nooks on the steep slopes. These terraces perching along the slope provide dramatic views of the park and a place for contemplation.
4. Currently the connection between the pond area and southern portion of the park is slightly convoluted. The proposed trail system simplifies the connection.
5. The existing shelter by the pond does not have a paved walkway to it, making it hard to use for many residents. The proposed trail system provides a direct connection to this shelter from the main parking lot and helps to connect the shelter with other amenities on this side of the park.

FLOOD MITIGATION

The flood mitigation strategies proposed in this phase will play a significant role in alleviating the flooding issues in the park. Three main areas allocated towards the mitigation strategy in this phase are:

1. The area of the park between the Blacks Run Tributary to east of the park and JMU is underutilized and experiences significant flooding during rain events. This area is naturally suited for flood plain reconnection and such measures will help significantly in reducing impact of water coming from JMU side and under I-81.
2. Land between the proposed multi-purpose sports field and the Blacks Run Tributary. This will help alleviate flooding impacts on the field.
3. To the south of the park along Blacks Run. This will play a role in alleviating flooding caused by the swelling of water, which might be a result of bottle neck effect downstream caused by road crossings and bridges.

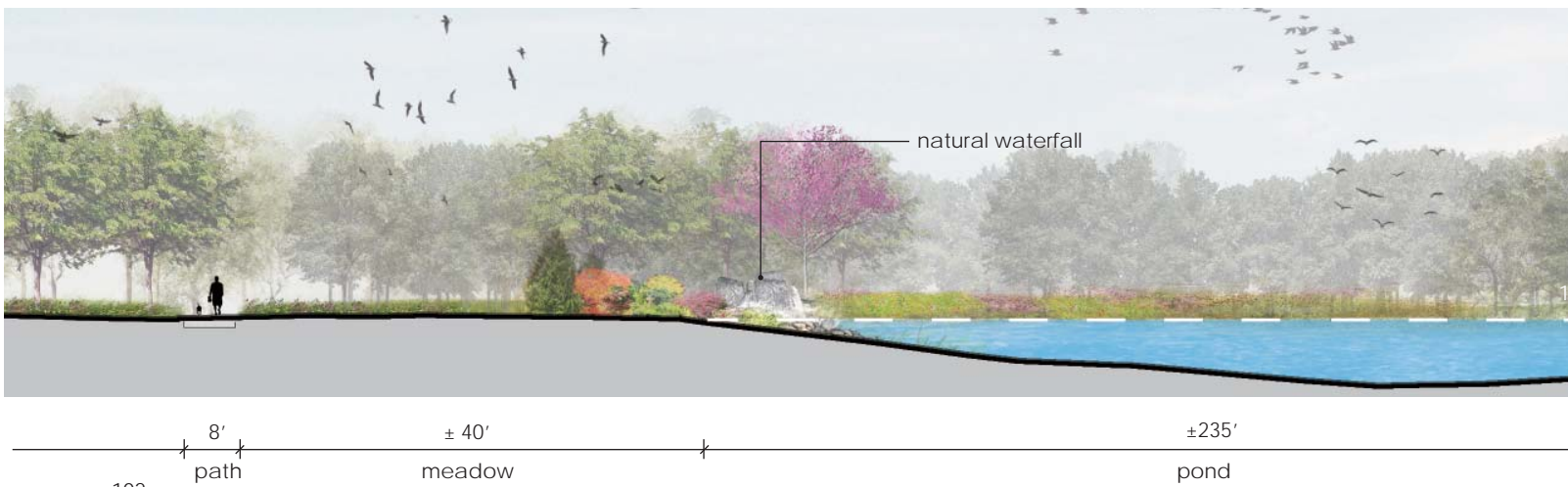


Lansdowne on the Potomac
Source: LSG Landscape Architecture

DESIGN FOCUS AREA: POND



DESIGN FOCUS AREA: POND





DESIGN FOCUS AREA: POND



LIGHT FIXTURES ALONG TRAIL

ENLARGED FISHING DOCK WITH NEW SHADE STRUCTURE

BLUESTONE TRAIL

AERATION FOUNTAIN



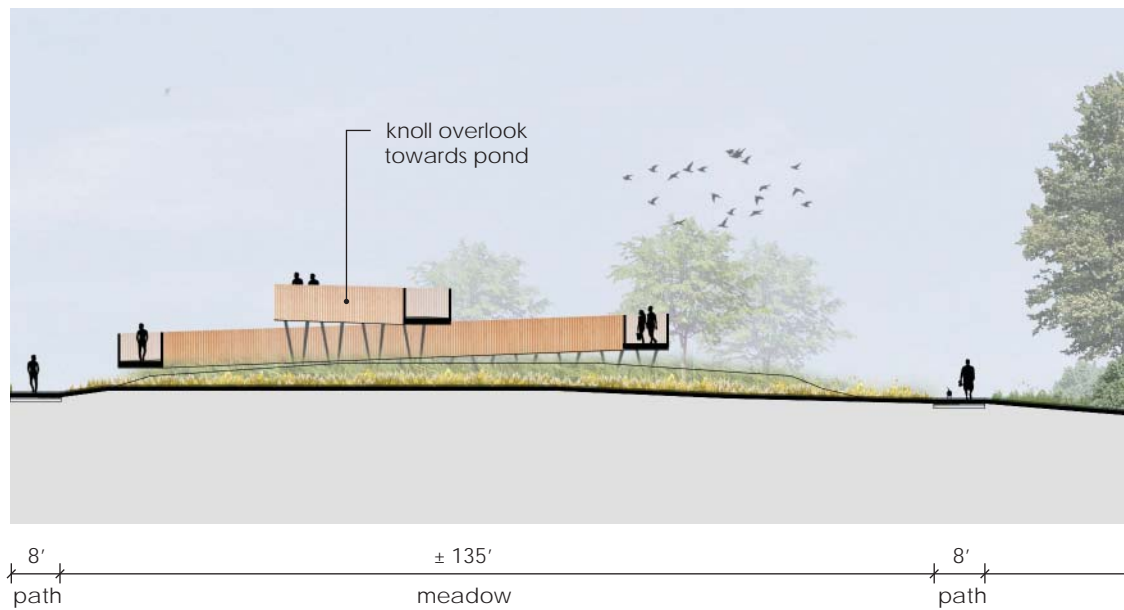
NATIVE FLOWERING PLANTS

WATERFALL

ROCKS AND BOULDERS
AT POND EDGE

EXISTING
HERITAGE
TREE

DESIGN FOCUS AREA: HILLSIDE





± 395'
floodplain reconnection
8'
path



± 80' riparian buffer
± 38' stream
± 135' floodplain reconnection
boardwalk

DESIGN FOCUS AREA: HILLSIDE



UNIQUE ART ELEMENT WITH VIEW OF THE PARK

POLLINATOR GARDEN WITH NATIVE PLANT MATERIAL



PHASE 3

Phase III of the park focuses entirely on the development of the park west of Blacks Run. The proposed developments in this part of the park require significant capital investment. The design team had numerous discussions with the Parks and Recreation Department to craft a vision for this area. The proposed improvements in this part of the park will truly make Purcell Park a model for sustainable park design. It will also make this park more accessible and equitable.

As discussed earlier in the site analysis, it is clear that the existing ball fields in this area are facing major flooding issues every year. Since these fields are clearly in the 100 year floodplain it is rather difficult to invest money necessary to provide continual maintenance and repairs to essential infrastructure. The City is however committed to finding other places within the city to provide state of the art facilities for the programs that are currently held at Purcell Park. Once the sports programs are relocated, the entire area can be reimagined for a different type of programming. Throughout the focus group meetings and through the community survey people expressed a need for an amphitheater, a place for special events and festivals, such as culinary and food demonstrations, seasonal festivals, craft and music events, as well as place a for interactive nature activities. This part of the park is predominantly dedicated to these program elements.

The master plan envisions three major interventions in this part of the park in place of ball fields.

The first is dedicating a major portion of this area towards floodplain reconnection. This will significantly reduce flooding throughout the park. Second is the development of picnic pavilions and an informal amphitheater with stage and series of open terraces for an outdoor performance or special event.

Lastly, providing a network of trails that will serve three purposes:

1. Provide access from this portion of site all the way to Bluestone Trail along the southern side of the stream.
2. Provide access through the floodplain reconnection in the form of elevated boardwalks from the western portion of the site to the pond area and hillside beyond.

3. Providing trails and walkways to the amphitheater seating.

All these improvements present a huge opportunity to witness a dynamic range of wet and dry conditions and transform this park into an outdoor education center for the surrounding schools and nature enthusiasts. A series of interpretive signage and environmental art programs has been envisioned in this area.

Through the site analysis it was determined that the entrance on this side will be more effective if it provides direct access from South Main Street and has the potential to improve public transportation to the park. Providing access to the park through a convenient public transit system such as the bus is important towards making this park sustainable and equitable.

The development is achieved by the incorporation of additional land into Purcell Park's vision. The parcel is currently occupied by Funky's Skate Center. Should that parcel become available for sale, it is recommended that the City consider purchasing it. The details of that transaction are not within the scope of this master plan effort and should be explored by the city separately.

The master plan envisions a welcoming arrival sequence between South Main Street and the current Funky's Center. Improvements to this area would include street trees and sidewalks on both sides of the road, and a roundabout at the end. The roundabout should allow buses to be able to turn around, so that the park can act as one of the main stops along the bus route. The roundabout also provides an easy drop-off and pickup zone.

The new entrance would be comfortably outside of the 100 year floodplain and thus the master plan also envisions a Welcome Center in this location. The Welcome Center could provide additional restrooms, a small nature center, water fountains, a park rangers' station and storage for park maintenance. Additionally, this area provides for a modestly sized dog park and connections to the other side of the park.

Another nature centric imagination playground made of natural wooden logs and boulder is also envisioned on this side of the park, tying together the conservation, gathering and recreational aspects of the new Purcell Park.



Dog Run

Bus Stop

Natural Center

Bioretention

Parking Reconfiguration

New Pavilions

Rock Climbing Wall

Natural Play Area

Seat Walls

Performance Stage

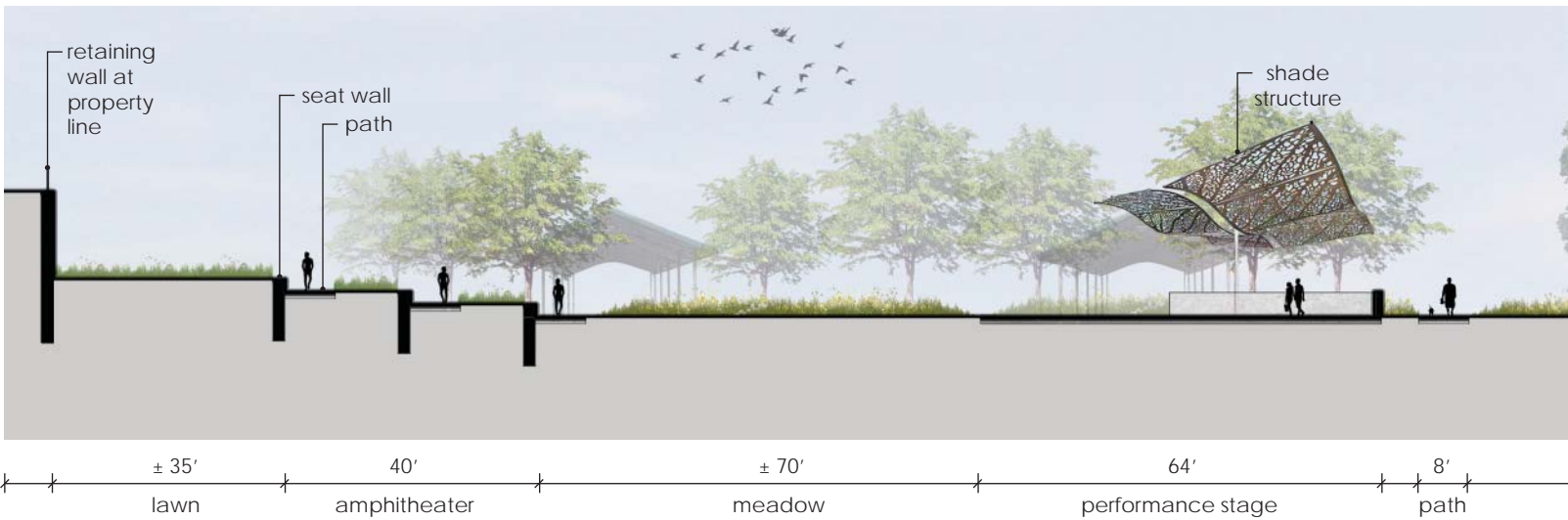
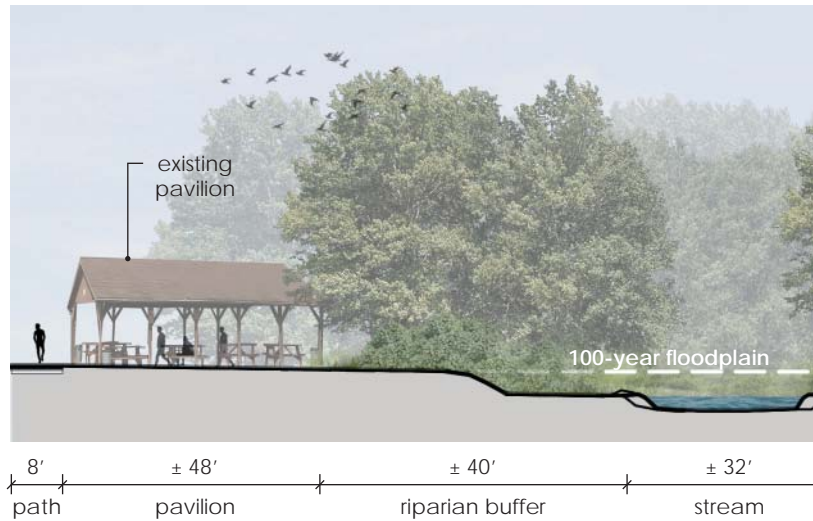
Boardwalk

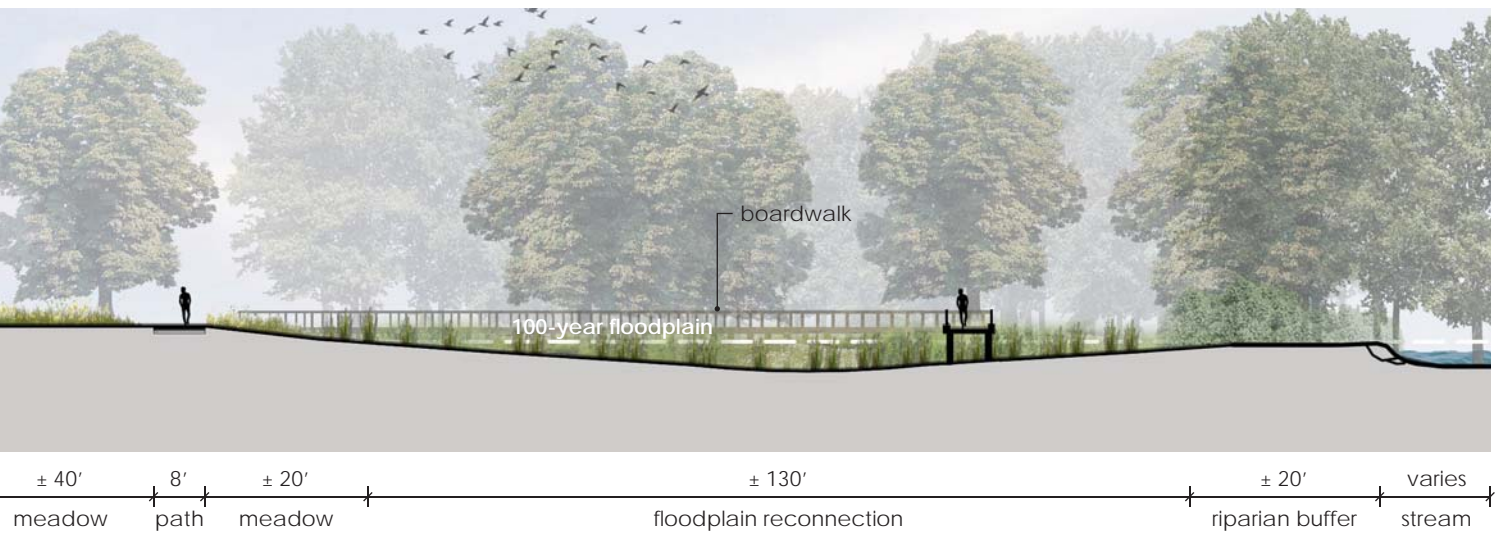
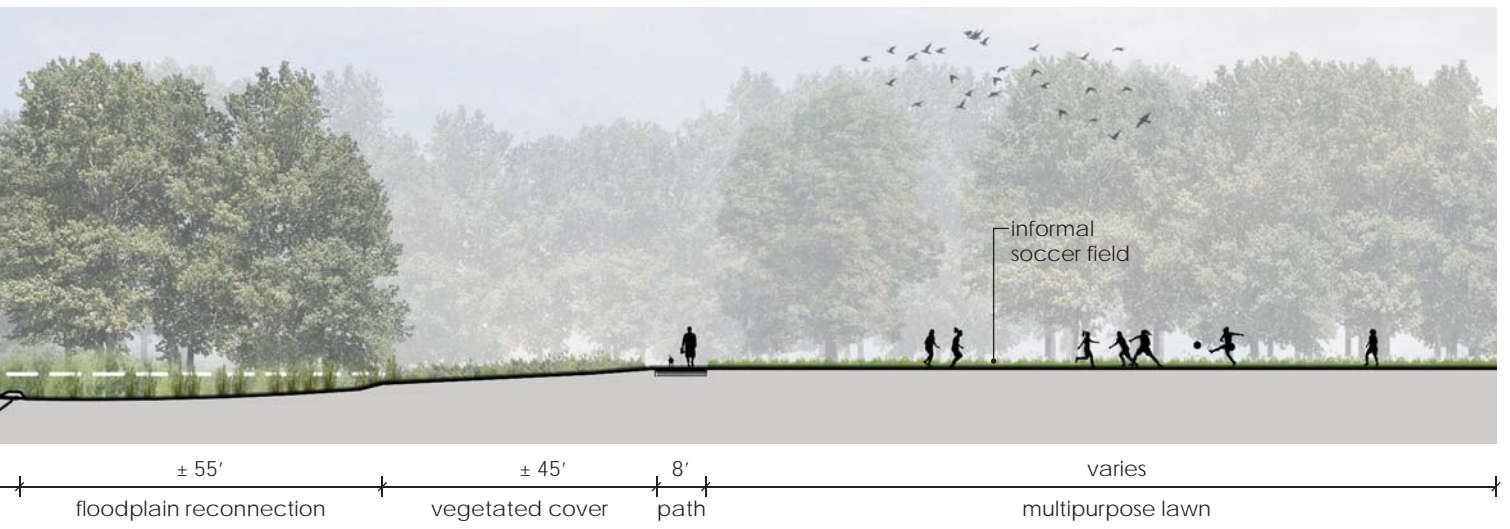
Floodplain Reconnection

Southern Trail Connection

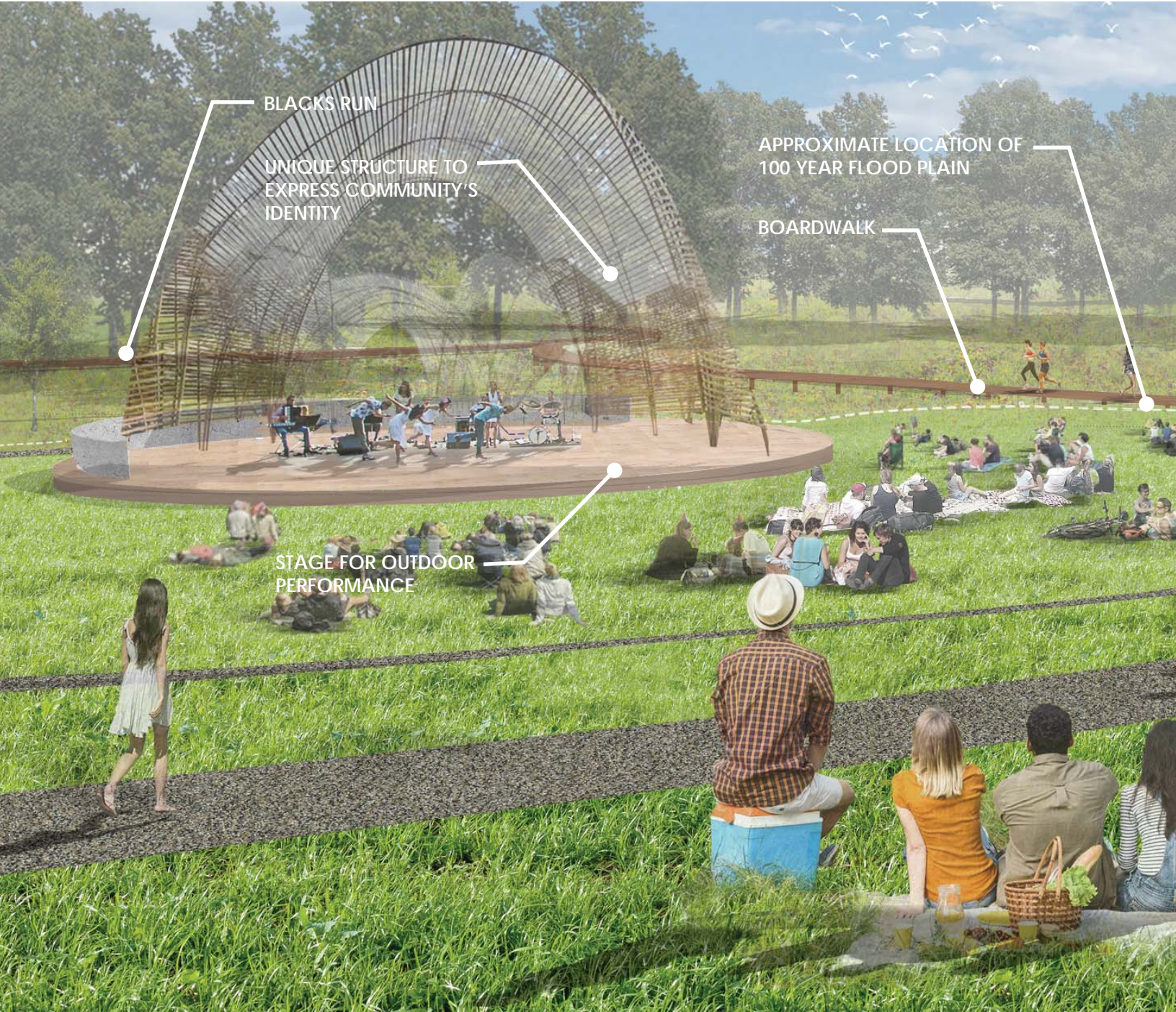


DESIGN FOCUS AREA: PERFORMANCE SPACE AND CONSERVATION AREA





DESIGN FOCUS AREA: PERFORMANCE SPACE AND CONSERVATION AREA





FLOODPLAIN RECONNECTION AREA
WITH NATIVE PLANT MATERIAL

SITE SPECIFIC ART INSTALLATION

PATH CONNECTION TO
BLUESTONE TRAIL

STORMWATER BMP STRATEGY

The project stormwater needs assessment was conducted on a phase by phase basis, to ensure the Virginia Stormwater Management Program (VSMP) requirements are met at every step of implementation of the park master plan. The water quality assessment was conducted in accordance with the Virginia Runoff Reduction Method (VRRM 3.0) requirements.

A major stormwater constraint within the park is the extent of the 100-year floodplain. A number of standard DEQ approved stormwater management BMPs recommend not being located within the floodplain limits, so this was a constraint considered in the proposed stormwater management strategy.

This strategy also is compliant with the July 18, 2019 Memo to Local Engineers & Developers regarding the City's requirement of not relying on offsite nutrient credit purchases.

Finally, the stormwater quantity control requirements for Purcell Park will be addressed through proposed BMPs and sheet flow conditions within the Park.

The proposed stormwater management strategy has proposed the following type of

DEQ approved BMPs, throughout the phases of implementing the Park Master Plan:

- Sheetflow to conserved open space (C/D soils)
- Sheetflow to conserved open space (A/B soils)
- Rooftop disconnection (from pavilions and restrooms)
- Dry swales
- Bioretention Level II (outside floodplain limits)

Use of conserved open space as a stormwater management method will require these areas to be preserved for natural conditions, restricted to only passive recreational land uses and minimal disturbance during construction. It may be necessary for open space to be evaluated for soil enhancements and vegetative plantings to meet Virginia stormwater requirements for conserved open space.

A summary of the VRRM inputs, proposed BMP types, and demonstration of compliance with water quality requirements, per phase is outlined in the table below, with the accompanying schematic of BMP locations shown in Figure 3 (next page): Supporting VRRM site pollutant removal requirements, on a phase by phase basis, with supporting calculations for compliance with the proposed BMPs is supported through exhibits in the appendix.

Phase		1	1A	2	3	
Site Area Breakdown	Pre-Development	Forest/Open Space	0.48	0.22	3.03	7.86
		Managed Turf	4.88	2.20	13.62	9.95
		Impervious Cover	0.78	0.26	1.55	4.27
	Post-Development	Forest/Open Space	0.87	0.61	3.54	8.61
		Managed Turf	2.97	0.58	12.36	8.89
		Impervious Cover	2.30	1.49	2.31	4.58
Total		6.13	2.68	18.21	22.08	
TP Load Reduction (lb/yr)	Phosphorus Removal Required		3.20	2.21	3.06	3.20
	Phosphorus Removal Provided		3.40	2.33	3.28	4.33
	Net		0.20	0.12	0.23	1.13
BMPs Used		Sheetflow to Conservation Area, C/D Soils Disconnected Rooftop Dry Swale	Sheetflow to Conservation Area, C/D Soils	Sheetflow to Conservation Area, A/B Soils Sheetflow to Conservation Area, C/D Soils Bioretention #2 Disconnected Rooftop	Sheetflow to Conservation Area, C/D Soils Bioretention #1 Disconnected Rooftop	



PHASE 1A PLAYGROUND

- Playground Improvements including
 - Raising of the play area above the flood plain.
 - Play Equipment
 - Play surfacing.
 - Lighting
 - Shade structures
 - Landscaping
- Create areas to treat stormwater from new and existing development
- Floodplain reconnection associated with playground improvements
- Reroute overhead electrical line away from playground
- Adjustments to trail alignments

COST: \$3,087,000

PHASE 1B INITIAL DEVELOPMENT

- Improve parking configuration
- Expand parking areas at neighborhood entries
- Bioretention areas for stormwater management
- Resurface tennis and basketball courts
- Trail alignments and adjustments
- Restroom improvements to make them accessible year round
- Create seating areas and shade structures
- Additional landscape planting
- Park signage to include: entry signs, interpretive signs and wayfinding signs

COST: \$3,033,000

Note:

The design team recognizes that the priorities of the City and residents may change over time and so it may be necessary to revisit the park master plan as the City completes each phase of the park and sets the stage for the next phase. If it is possible to accommodate items from future phases in earlier efforts, the City should prioritize development accordingly.



PHASE 2A INFORMAL FIELD

- Informal Rectangular Field
- Create areas to treat stormwater from new and existing development
- Addition of missing trail connections, minor realignment of trails, resurfacing in some areas, lighting as needed
- Floodplain reconnection
- Sensory garden

PHASE 2B HILLSIDE AND POND

- Pond improvements including:
 - Accessibility
 - Improvements to Fishing Dock and *incorporation of a pavilion.
 - Addition of cascading waterfall
 - Pollinators' Garden surrounding the pond using native plants.
 - Rocks and Boulders for people to create a unique natural setting.
 - Picnic benches,
 - Addition of aeration fountain
- Stormwater management
- Floodplain reconnection areas
- Improvements to Trail network to include:
 - Addition of missing trail connections
 - Addition to trails to provide access to newly created signature areas
 - Addition of boardwalks in the flood plain reconnection areas
 - Realignment of trails to improve circulation
 - Resurfacing of worn out sections of the trail
 - Lighting along Bluestone Trail
- Seating platforms in the hillside for passive recreation
- Unique interactive art feature and overlook
- Additional landscaping including native trees, native shrubs, groundcovers and perennials

COST: \$4,395,000

Note:

The design team recognizes that the priorities of the City and residents may change over time and so it may be necessary to revisit the park master plan as the City completes each phase of the park and sets the stage for the next phase. If it is possible to accommodate items from future phases in earlier efforts, the City should prioritize development accordingly.



- Informal Rectangular Field
- Floodplain Reconnection
- Sensory Garden
- Boardwalk
- Existing Park Structure
- Floodplain Reconnection
- New Pavilion and Pond Overlook
- Artwork
- Waterfall & Feature Planting
- Sledding Hill
- Floodplain Reconnection
- Knoll Seating



PHASE 3

NATURAL AREA DEVELOPMENT

- Two Picnic Pavilions
- Nature Inspired Children's Play Area
- Event space to include:
 - Stage area
 - Unique structure or canopy for the stage
 - Provision for lighting and other necessary infrastructure
 - Seat walls
 - Gravel pathways
- Create areas to treat stormwater from new and existing development
- A major flood plain reconnection project to alleviate flooding issues
- Trail improvements to include:
 - Additional walkways and boardwalks through the floodplain reconnection
 - Additional trail connecting southwest portion of the property to the Bluestone Trail
- Site specific artwork
- Additional landscape planting
- Acquire additional property to develop:
 - Arrival sequence for the park
 - Bus stop
 - Additional and improved parking
 - Dog park
 - Park structure to house facilities such as a Nature Center, park office, restrooms and storage
 - New pedestrian connections to the park on the east side of the stream

COST: \$7,232,000

Note:

The design team recognizes that the priorities of the City and residents may change over time and so it may be necessary to revisit the park master plan as the City completes each phase of the park and sets the stage for the next phase. If it is possible to accommodate items from future phases in earlier efforts, the City should prioritize development accordingly.



- Dog Run
- Bus Stop
- Natural Center
- Bioretention
- Parking Reconfiguration
- New Pavilions
- Rock Climbing Wall
- Natural Play Area
- Seat Walls
- Performance Stage
- Boardwalk
- Floodplain Reconnection
- Southern Trail Connection



Purcell Park Master Plan

August 2020
Harrisonburg, Virginia

