

Master Plan *for the* Fishnet Property

November 2009



Prepared By:



With:

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Executive Summary

Introduction

This Fishnet Property Master Plan report supports the goal of turning the site into a multi-use district park that serves the diverse needs of a growing County population. The report identifies program elements included in the proposed park and contains a summary of the site and needs analyses and an implementation plan that outlines project costs, phasing, and possible funding sources. This narrative is supported by a master plan concept that illustrates the proposed uses for the park.

Summary of Findings

The 219-acre Fishnet Property is located on Rockland Road, northwest of the Town of Front Royal in Warren County. The property was purchased by the County from Fishnet Ministries, which still operates on an adjacent parcel of land.

The property is well-suited to become park land, given its rolling topography, adjacency to the Shenandoah River, wooded areas, and far-reaching views. The property is limited in terms of building development due to steep slopes, limestone Karst topography, and the presence of the endangered Madison Cave Isopod in the western edge of the site. The intent is for the Fishnet Property to become a district park, as set forth in the 2007 Comprehensive Parks & Recreation Master Plan for Warren County. District parks serve broad purposes by providing access to open space and wide array of recreational opportunities.

The park program features both passive and active recreation opportunities, as requested by the public in surveys and meetings. The potential exists for either a recreation center or an elementary school on the site (or a combination of the two), should utility capacity become available in the future. For more information about utilities, refer to the Needs Analysis in Appendix A of this report. In addition to the need for enhanced utility service, earthwork grading is necessary to fit the larger features (including the recreation center, school, and athletic fields) onto the site's rolling topography. It is likely that each phase of construction will have excess cut or fill that must be mitigated.

The park is proposed to be constructed in a series of four phases ranging from immediate implementation to more than 10 years. The timing and content of each phase is dependent on available funding and current County need. The first phase will include construction of the entrance roads, ball fields, and trails. The final phase will investigate the possibility of constructing the recreation center, school, and fire/training complex. One of the immediate goals is to have the Fishnet Property become a functional park that is open to the public as soon as possible.

Cost estimates were prepared for each phase of the master plan program and are included in the Implementation section of this report. The cost estimates provide an idea of how much each phase and each program element might cost using 2009 dollars.

Funding sources for each phase, and each element within the phases, will vary and likely include County tax dollars, grants, bonds, and proffered monies. A breakdown of potential funding sources for each element is also located in the Implementation section of this report.



Program Elements Include:

- *Recreation Center*
- *Trails*
- *Softball & Baseball Fields*
- *Rectangular Practice Fields*
- *Disc Golf*
- *Playgrounds*
- *Camping Facilities*
- *Existing Barn*
- *Dog Park*
- *Exisitng Residence*
- *Stage & Event Space*
- *Picnic Areas*
- *Canoe/Kayak Ramp*
- *Interpretive Signage*

Site Analysis & Needs Analysis Summary

Site Analysis Overview

The Fishnet Property is an approximately 219-acre site located in Warren County, Virginia, to the northeast of the Town of Front Royal. The entrance to the site is located on Rockland Road/Rt. 658.

The property is bounded to the north by Rockland Road; to the west by the Norfolk & Western Railroad right-of-way; to the south by the Shenandoah River; and to the east by private property, including Fishnet Ministries which once owned the entirety of the Fishnet Property.

The topography is gently rolling and presents primarily as open, grass-covered fields with wooded areas growing mainly in the southern portion of the site. The topographic elevations range from about 550 feet above mean sea level (MSL) to 660 feet MSL.

The southern portion of the site also contains karst topography and numerous sinkholes and limestone outcroppings. These areas are not conducive to intense development and are better suited to features and activities that lay lightly on the land, such as primitive camping and hiking trails. In addition, the Madison Cave Isopod, a crustacean on the Federal Threatened and Virginia Endangered Species lists, has been confirmed on the Fishnet Site. There will be no development or access allowed in isopod area.

Numerous gravel roads cut through the site to provide access to various amenities; these roads appear well-maintained and may be able to be re-used in a park scenario.

Throughout most of the site, views within and out of the property are highly attractive, particularly when looking south toward the Shenandoah River. These pleasant views are somewhat interrupted when looking westward toward the light industrial development that grew up along the railroads tracks.

Needs Analysis

A Needs Analysis was prepared for the Fishnet Property to determine what program elements were in highest demand and lowest supply within the County parks and recreation system. The Needs Analysis looked at public and stakeholder demand through forums and surveys and statistical data from the Comprehensive Parks And Recreation Master Plan and statewide and regional athletic use data. The Needs Analysis, with the exception of appendices containing utility capacity and demographic statistics, is located in Appendix A of this report.

The Needs Analysis showed that Warren County is growing and the parks and recreation system must grow as well to meet demand. Demographic data shows that the number of older adults and families will increase in the next fifteen years, which points to a need for more recreation facilities that serve these two segments.

Public surveys completed for the Needs Analysis showed a high demand for walking, hiking, and bike trails. Indoor recreation facilities and disc golf were also of higher importance. Stakeholder surveys, completed by group and organization leaders within the community, expressed high demand for practice fields, indoor recreation facilities, and softball fields. Statistical data showed that there currently are shortfalls for indoor recreation space, baseball and soft-



Looking Southwest from Barn.



Madison Cave Isopod.



Existing Residence.



Looking northwest from campsite access road.

ball fields, rectangular playing fields, and camping facilities. Additional athletic use data showed that Virginians have higher participation rates for walking, running, swimming, day hiking, basketball, and softball. In general, all data supported what was determined from public and stakeholder surveys during the course of this project.

Comparative analysis of the public and stakeholder surveys and statistical data showed that priority should be placed on constructing trails, softball fields, indoor recreation facilities, and baseball fields.

Utility Capacity Overview

Draper Aden Associates (DAA) evaluated the existing conditions of the Fishnet property utilities (sanitary and water) and explored water and wastewater utility options for future development of the property. Based on their research, in order to implement the entire plan with school, recreation center, and other utility capacity-using elements, the best option is to connect to the Town of Front Royal water and sanitary sewer lines at some point in the future. However, early phases of the master plan implementation could likely make use of a mass drainfield until the larger capacity-using buildings.

Other options explored were to purchase and upgrade an existing water well from Fishnet Ministries for use by the park and construct an on-site wastewater treatment packet plant. Neither of these options were deemed feasible at this time.

Existing Buildings & Facilities

OWPR Architects and Engineers provided the building and facility assessment. The nine buildings and facilities located on site are as follows:

- | | |
|------------------------|--------------------------|
| Barn | House Trailer Near Stage |
| House | House Trailer On Hill |
| Toilet/Shower Facility | Utility Building |
| Stage | Lower Picnic Shelter |
| | Upper Picnic Shelter |

OWPR found that the Toilet/Shower Facility, Utility Building, and Upper and Lower Picnic Shelters had high adaptability. The Barn, House, and Stage had moderate adaptability. The two House Trailers had low adaptability and should be removed from the site.

LPDA assessed smaller-scale features using the same procedure for the following items:

- | | | |
|---------------------|------------------------|-----------------|
| Playground | Bathhouse Wood Steps | Horseshoe Court |
| Roads | Campsite Hook-ups | |
| Primitive Campsites | Mister/Shower Facility | |

LPDA found that the bathhouse wood steps and roads had high adaptability for future uses, the primitive campsite and campsite hook-ups had moderate adaptability, and the playground, horseshoe court, and mister/shower should be removed.



Seating near playground and house.



Existing Barn.



Campsite with hook-ups.



Trail along river.

Site Access Overview

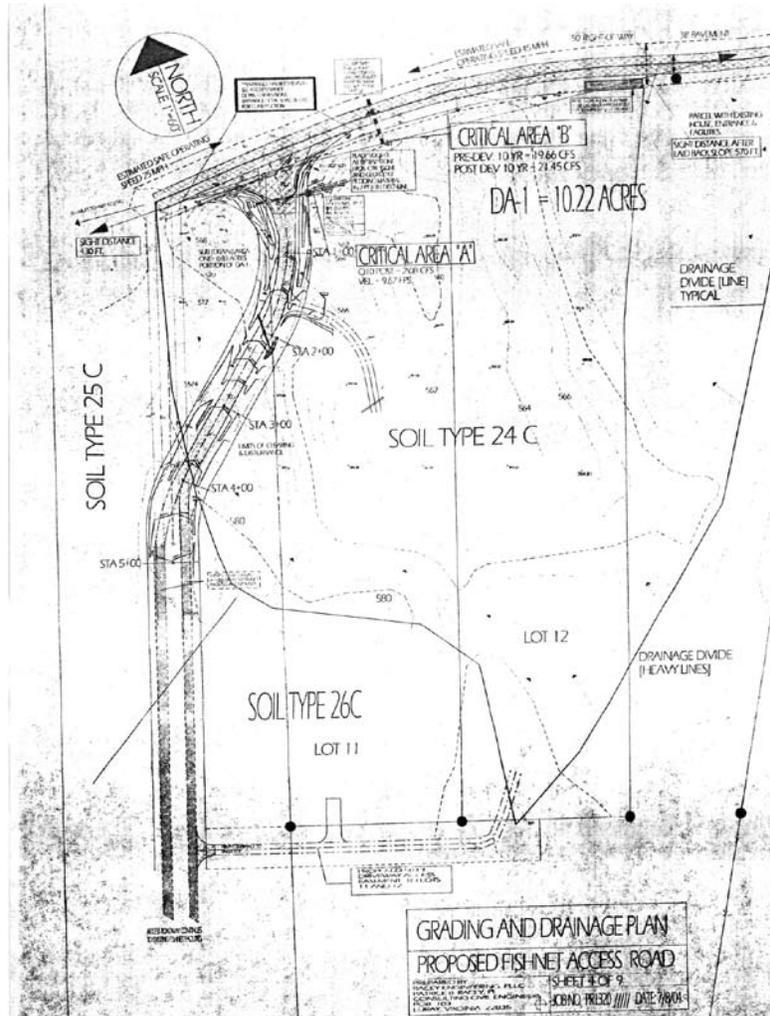


Across Rockland Road from site entrance.

The entrance to the Fishnet Property is located on Rockland Road, just east of the Norfolk & Western Railroad crossing. At present, the entrance will likely not meet VDOT standards for access and sight distance due to proximity to the railroad crossing and horizontal curves on either side of the entrance.

There is, however, an entrance site plan on file with VDOT that shows improvements to the entrance that will allow traffic to safely access the site. This plan was submitted in 2004 by Racey Engineering, PLLC and approved by Arthur Boyce of VDOT the same year. This plan is located on the following page. The entrance plan shows a VDOT CG-11 Commercial Entrance with a 12-foot offset, CG-7 curb and gutter, and 4:1 taper lanes. The existing road has a 50-foot right-of-way and 18-foot pavement width. Although the capacity of the entrance in trips per day is not currently known, a note on the site plan states that the entrance design is an upgrade to an existing access road and will continue to serve the already existing traffic volume.

Warren County and VDOT have also had discussions concerning a possible overpass over the railroad tracks which would impact the Fishnet Property entrance. No plans or studies have been completed to date for this project.



2004 Site Entrance Plan prepared for Fishnet Ministries and approved by VDOT.

Summary of Public Comment

Needs Analysis

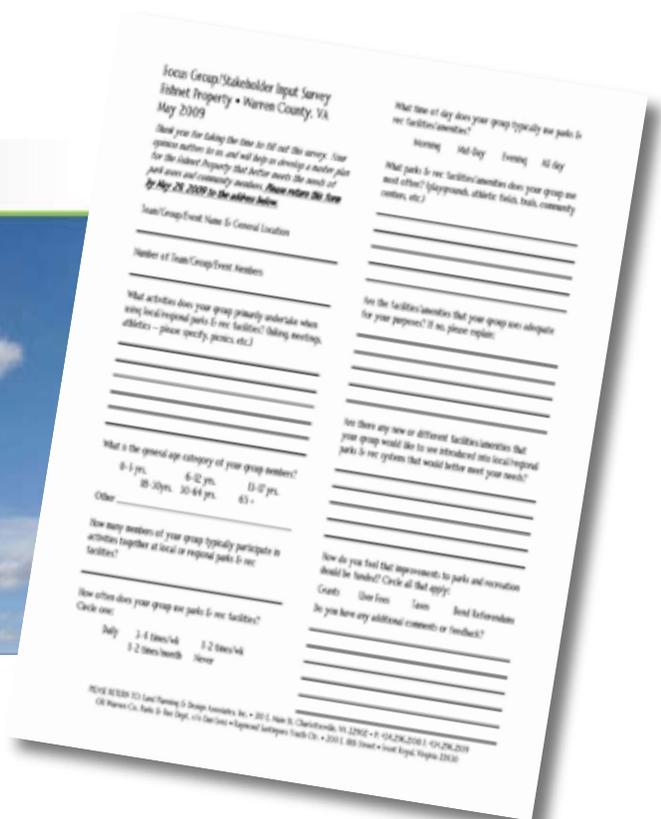
A public forum was held in June 2009 to obtain comments and feedback from community members. The community also had the opportunity to provide comments via paper survey and on-line survey. The intent of the forum and surveys were to learn what program elements the majority of people living in Warren County wanted to see in a new park. The surveys included questions about the perceived strengths and weaknesses of the County parks and recreation system and what types of new facilities would be appreciated.

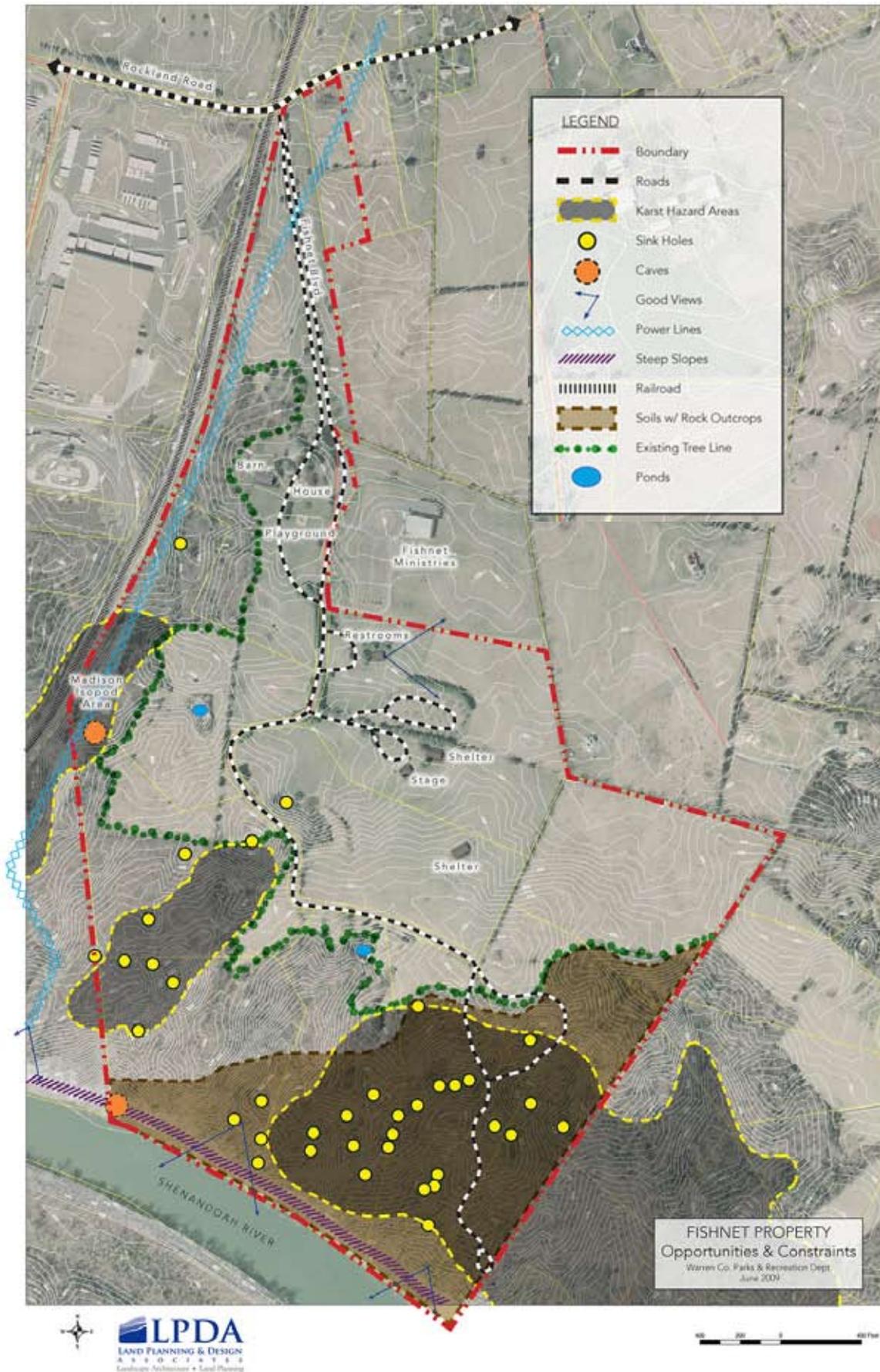
Surveys that were completed showed a high demand for walking, hiking, and bike trails. Indoor recreation facilities and disc golf were also of higher importance. In general, the responses showed that the public wanted to see a variety of passive and active uses in any new park that would address the needs of a diverse population including team sports participants, families, and walkers/hikers.

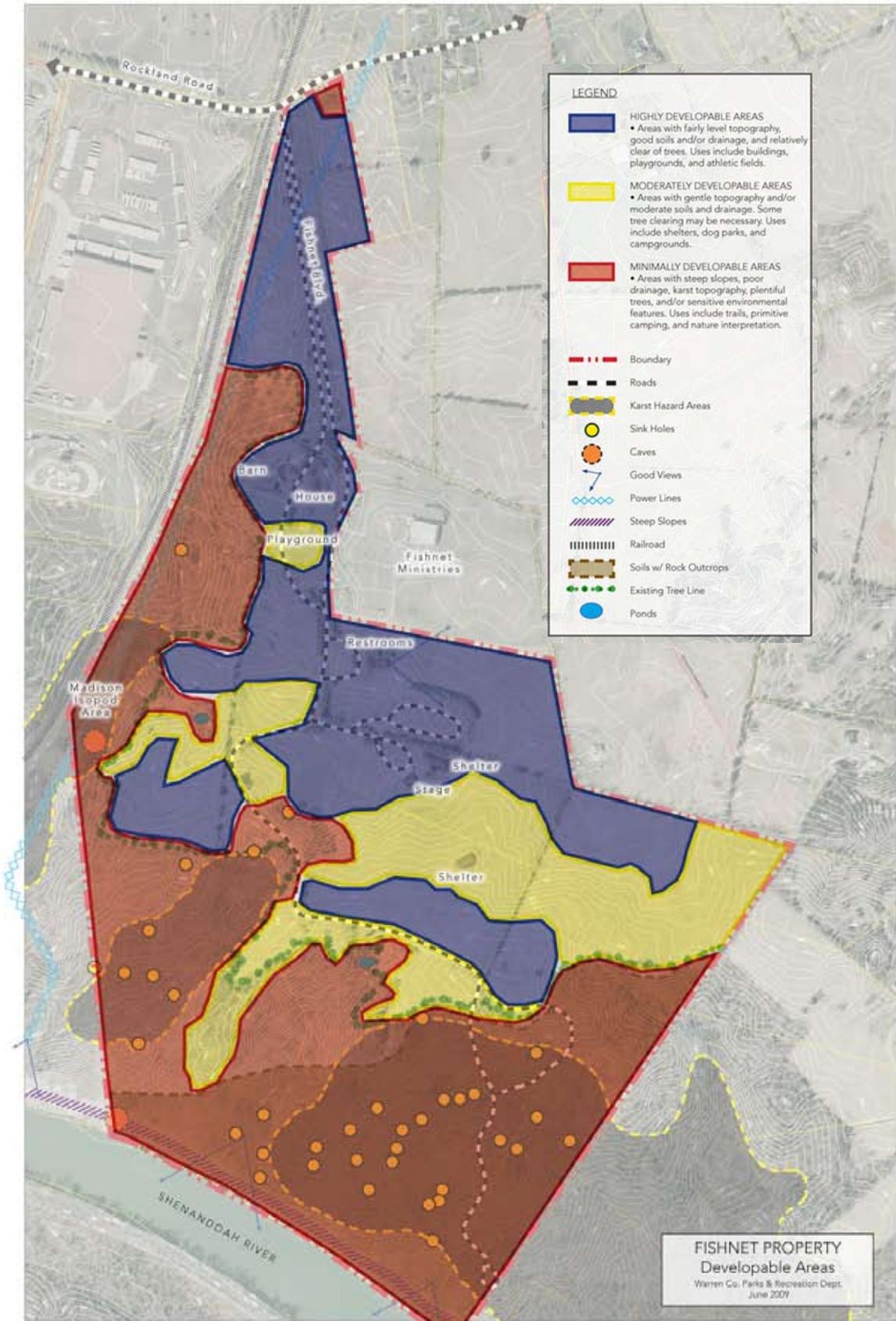
Master Plan Concept

A second public forum was held in September 2009 in order to present the draft master plan concept. Again, the public had the opportunity to comment at the meeting as well as via paper and on-line surveys. Survey questions asked how the respondents felt about the proposed program elements and what elements should be implemented first.

When asked what they liked best about the master plan concept, the public overwhelmingly noted the trail systems. Other positive responses included the disc golf course, school, and camping. They appreciated the fact that there many types of activities to cater to varying interests. When asked what the public would like to be implemented first, they again responded overwhelmingly with trails.







Design Narrative

Introduction

The program for Fishnet Park meets the goal identified in the Comprehensive Parks and Recreation Master Plan of developing the site as a district park. District parks are typically centrally-located and serve broad purposes such as providing access to open space and various forms of active and passive recreation. Because district parks have a service radius of up to 15 miles, Fishnet Park has the ability to serve a large portion of Warren County.

The section below highlights the main programmatic elements included in the master plan for Fishnet Park. It should be noted that each element is intended to be phased in over time based on funding availability, current need, and available utility capacity. As described in the Phasing section of this report, the entirety of the master plan may not be constructed for more than 10 years.

Park-Wide Amenities

New Entrance and Access Roads

The existing entrance to the park will need to be shifted westward and improved to meet VDOT safety standards. This may require bridging a sinkhole located to the east of the current entrance. The existing access road will also need to be improved and slightly relocated to meet safety standards and accommodate the position of some of the new uses. A new road and parking lots must be constructed to provide access to the future practice fields, ball fields, stage, and dog park. The new entrance, access roads, and associated parking will be paved with asphalt. The existing gravel road will be paved with asphalt up to the Fire & Rescue Training Complex and then return to gravel as it heads south.



Walking Trails.

Walking Trails

Crushed stone walking trails are planned throughout non-wooded areas and provide access to elements such as the recreation center, gazebo, and playgrounds. The walking trails are planned as loops for visitors who want to use them for exercise, as well.

Athletic Use Area

Softball and Baseball Fields

The master plan includes two softball fields and one baseball field to meet demand expressed by the County and shown in the Needs Analysis. The softball fields are designed with a 65' baseline and 275' foul line to accommodate both men's and women's slow pitch games. The baseball field has a 90' base line and 300' foul line to meet high school baseball rules.



Softball/Baseball Facility

Concession Stand

The concession stand envisioned will contain men's and women's restroom facilities, a storage room, and a concessions room with roll-up door at the serving area. It will be centrally-located to the three ball fields.

Rectangular Fields

Multiple rectangular fields were included to accommodate football and soccer games and practices. The football fields are intended to be installed after the



Concessions Stand.

bath house is removed. Until then, the open space west of the bath house can be used as for picnicking, pick-up games, and informal practices.

Existing Bath House

The County intends to keep the existing bath house until the concession stand (with restroom facilities) is completed. At that time, the bath house will be demolished and the two football practice fields constructed.

Dog Park

An approximately 2-acre dog park with associated parking and shelter were located east of the athletic fields. The dog park will be fenced with a double-entrance gate. The shelter is currently located on the outside of the dog park so as to be usable by all park visitors, but can be constructed within the park if a fourth reservable shelter is not deemed necessary.

Wooded Areas

Hiking Trails

Hiking trails were planned as cleared dirt paths through the wooded areas. The hiking trails will be used to access three overlooks with views to the river. The overlooks are intended to be simple clearings with benches and possibly interpretive signage. If mountain bike trails are desirable, a dedicated bike loop should be created to avoid bike/pedestrian conflicts. Another option would be to limit mountain bike usage to certain days.

Disc Golf

An 18-hole disc golf course was included through the woods. This course was loosely based on standards for a “White Tee” layout through “Corridor” conditions. A parking lot services two nearby shelters. The shelters are intended for general use by all park visitors, although they could be used by disc golf participants when not reserved.

Primitive Camping

Existing tent platforms will be improved for use by overnight campers. No electric or sanitary services will be supplied, with the possible exception of portable toilets. The existing loop road will provide access to the tent platforms.

Canoe Launch and Steps

A concrete canoe launch is proposed in the lower southwestern corner of the site. The launch will be used as a put-in site for Fishnet users or as a take-out point for canoers and kayakers floating down the river. The potential exists for a canoe/kayak locker to store canoes for people who want to use Fishnet Park for an extended period of time. Because the launch site is on the river edge and at the bottom of a small bluff, a set of steps will be installed to improve access. These steps are intended to fit with the existing topography and natural surroundings.



Rectangular Playing Fields.



Dog Park.



Disc Golf In Woods.



Canoe Launch.



Playgrounds.



Outdoor Educational Area.



Recreation Center.



Outdoor Stage.

Recreation Center Area

Recreation Center

The master plan proposed a 60,000 square-foot recreation center to be located in the northern half of the site. A recreation center of that size could contain a gymnasium, pool, meeting space, offices, and a kitchen. The recreation center is considered one of the last phases of the master plan due to its relatively high cost and subsequent need to raise funds.

Other options for the recreation center include decreasing the size of the center to include only a gymnasium which would better relate to the identified need for more indoor recreation space rather than a swimming pool and making use of the new elementary school gymnasium during non-school hours.

Playgrounds

Playgrounds were included based on input from public and stakeholder surveys. Two playgrounds were located near the existing residence and barn; one play area will be for children under 5 years of age and the other will accommodate children over 5 years of age.

Rehabilitated Barn

The existing barn will be rehabilitated to become event space. It is envisioned that the barn could host weddings, dances, informal meetings, and other group activities. The doors on the north side of the barn could open onto a large terrace to create an outdoor event space. To the south, the lawn could also host outdoor events such as small weddings and fundraisers. The barn will require some structural repair, roof work, new plumbing, upgraded electrical service, and other repairs.

Rehabilitated Residence

The existing residence will be rehabilitated for a number of uses including County office space, overnight guest accommodations, or conference/retreat space. The residence will require repairs in order to become usable space.

Outdoor Educational Area

The outdoor educational area consists of a loop trail around the existing pond south of the proposed recreation center. Interpretive signs will be located along the crushed stone trail and educate visitors about topics such as the Madison Cave Isopod, Karst and limestone topography, the Shenandoah River, and other ecologically-significant items in the park or region.

Stage Area

Stage

The existing stage will be demolished a new stage will be built in its place. In association, a parking lot is proposed west of the stage to accommodate event traffic. A large turn-around will assist large trucks that need to load and unload equipment.

Playground

A third playground was planned in between the stage and existing shelter. The intent was for this playground to be used by children under 5 years of age. It was placed here to be convenient for families who were either using the shelter or ball fields.

Existing Lower Shelter

The existing shelter can be re-used with very simple repairs, such as roof and gutter work and electrical inspection. The large size—40 feet by 80 feet—could accommodate multiple groups at one time if a partition system is utilized.

RV Hook-ups

To the east of the stage are planned at least 10 RV electric hook-ups where RV's and mobile campers could connect for power. The intent of these hook-ups is to service RVs that would be used during events, either as overnight accommodations or vendor outlets. The hook-ups are not intended for casual and weekend RV camper use. The hook-ups are located on a curving, paved driveway that will require the RVs to parallel park.

Overflow Parking

Overflow parking for large events is located south of the seating lawn. This parking area is intended to be maintained as grass, but may need to be reinforced with a grass-paving system such as GrassPave2 or Turfstone. The reinforcement will be necessary if the amphitheater is used frequently.

Gazebo

A gazebo was located on a high knoll south of the amphitheater in order to take advantage of pleasant views surrounding much of the park. The gazebo could be for casual use or used for small events such as municipal band performances or small weddings. In these instances, the gazebo should be wired for electric service. A small gravel parking lot was located near the gazebo.

Existing Upper Shelter

The existing shelter at the top of the lawn seating will be demolished when the gazebo is constructed.

School Area

Elementary School

The school shown on the master plan is approximately 77,000 square-feet and could accommodate 600 students. Although the master plan studies show that a school of this size can be fit onto the site, future architectural designs need to make efficient use of site in order to limit the need for earthwork grading and impact to the surrounding environment.

Fire & Rescue Training Complex

Fire & Rescue Training Complex

Limited space is available within the park for as large a complex as requested in



RV Hook-up/Vendor Area



Gazebo.

the stakeholder surveys. Any complex located within the park will likely be no larger than 5-6 acres rather than the 10-15 requested. Therefore, it will be up to the Warren County Fire Department to decide which elements of their training facility should be located here. It will also be the responsibility of the Fire Department to ensure that any facilities they locate within the park will not damage other park features or endanger visitors. These elements are as follows:

- Educational/Administrative Building
- Live Burn Training Building
- Trainee Break-Room Building
- Compressor/Cascade System Building
- 1000 SF pad for vehicle rescue and extrication
- Driving course for Emergency Vehicle Operator's Course
- Concrete pond with dry hydrant
- LP Gas Simulator
- Flashover Simulator
- Mayday Building or Trailer

Grading, Utilities, & Stormwater Management

Grading

Given the rolling topography and Karst formations, grading for Fishnet Park must be done sensitively and in limited locations. Even areas with the gentlest slopes in Fishnet Park will need to be graded to create level pads for athletic fields and buildings.

The buildings and fields were located on the most level areas of the site: in the central portion of the park. Grading concepts done as part of this master plan show that these elements can be successfully graded into the topography although there will need to be areas set aside for borrow material as well as to store excess dirt. See page 15 for conceptual grading plans. Grading the athletic fields will require importing fill from either on- or off-site, depending on the availability of fill material at the time. Grading the School and Recreation Center will require stockpiling material off-site. Grading for the Fire & Rescue Training Complex will likely require imported fill.

In terms of phasing, the first program elements to be constructed will be the athletic fields. If possible, it would be best to perform the mass grading for all the fields—the ball fields and practice fields—at once in order to be cost effective and limit environmental disturbance; this is shown in the conceptual grading plan. If it is desirable to keep the existing bath house until the concession building is completed, it would be best to grade in everything but the western two practice fields.

For each program element that requires earthwork and/or foundations, a geotechnical report should be done to ensure that site-specific soils are suitable for the intended element.

Utilities

The Needs Analysis identified a clear lack of sanitary and stormwater facilities to support the larger buildings shown on the plan (the Recreation Center, Elementary School, and Fire/Rescue Training buildings). However, because the plan will be constructed in phases, the utility service required by these buildings may be supported in the future.

At present, a mass septic drainfield will need to be added to serve smaller structures such as the concessions stand, bathrooms in the rehabilitated barn, and stage. This will likely need to take place in Phase II of the implementation due to the barn rehabilitation.

The Needs Analysis showed that an option for provided enough potable water to the site was to dig two new wells. However, this was based on requirements for the Elementary School, Recreation Center, and a 3,000-seat stadium. The master plan reduced the stadium to a concession stand and moved the School and Recreation Center to the last phase. Given these adjustments, it is likely that one new well would suffice until the County decides to build the Recreation Center or School. Again, the new well costs are included in Phase II of the implementation due to the barn rehabilitation.

Refer to the Needs Analysis in Appendix A of this report for complete utility information.

Cut & Fill Estimates...

Athletic Fields

- *Import Fill*

Recreation Center

- *Stockpile Excess Material*

Elementary School

- *Stockpile Excess Material*

Stormwater Management & Low-Impact Design Approaches

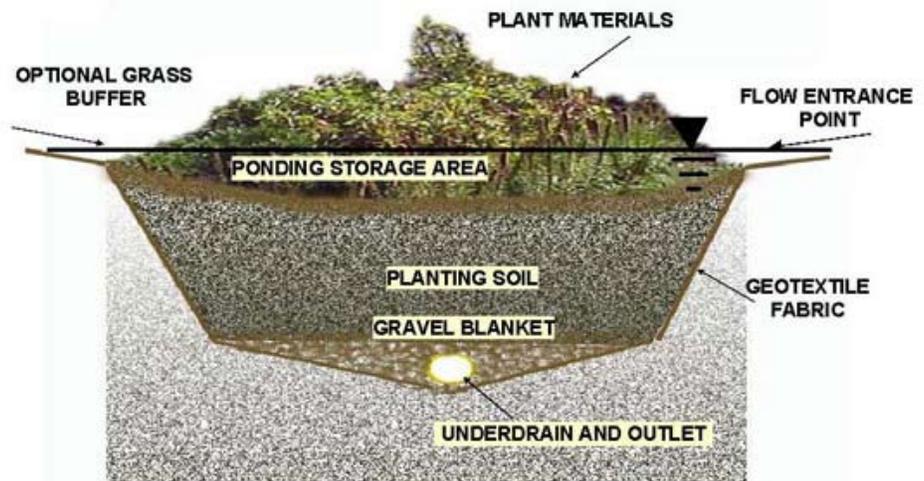
Stormwater run-off is created by impermeable surfaces that do not allow rain-water to infiltrate into the ground or soils that are already too saturated or compacted to allow natural infiltration. Run-off must be captured in holding areas, such as retention ponds, or directed into underground pipes and carried to other locations. It is particularly important at the Fishnet Site that excess run-off be directed away from the limestone Karst topography, which can become unstable if saturated. Therefore, the master plan shows a system of detention ponds and pipes that collect, treat, and move runoff safely through the site. Because State law requires that no additional run-off leave the site than what currently exists, it is important to make sure that as much water is captured on-site as possible.

Low-impact design (LID) stormwater management techniques help to protect the environment by limiting impact to a site. The three main principles for LID are to capture water, slow it down, and remove pollutants before the remaining run-off enters the ground. LID techniques that may be appropriate at Fishnet Park include rain gardens; cisterns; managing pipe outfall locations; permeable paving; filter strips; forebays; and reducing the use of underground pipes. Each of these techniques must be vetted on a case-by-case basis to ensure that they are suitable for specific soil types, infiltration rates, and run-off quantity and quality.

Bioretention basins, rain gardens, forebays, filter strips, and other biofiltration methods work by capturing water and releasing it slowly into the ground or another water detention device. These methods treat water quantity by containing it in one place, such as a basin, or slowing down its arrival to another location. In the same way, they work to treat water quality by slowing down infiltration times and thereby allowing pollutants to settle out before reaching the water table.

Water cisterns are essentially tanks that collect run-off for other uses. Irrigation is the primary use for cistern water, which both reduces the amount and cost of Town and well water that might be used for this purpose.

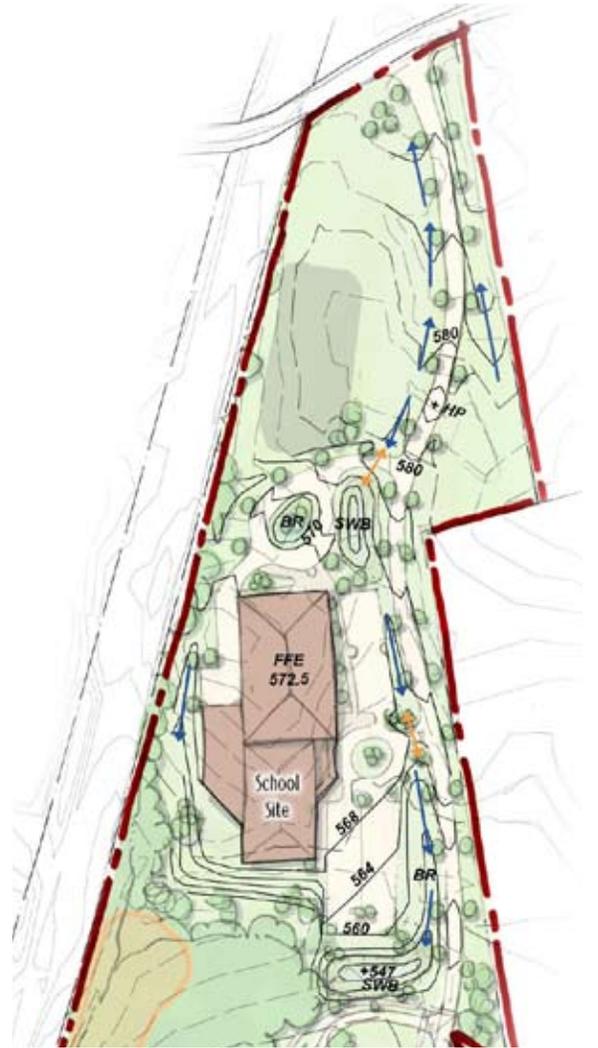
Managing pipe outfall locations is another important LID technique. Simply put, final designs must make sure that pipes do not outfall into environmentally sensitive areas such as sinkholes. Alternatives to piping should be looked in it appears that outfalls will direct water to these locations.



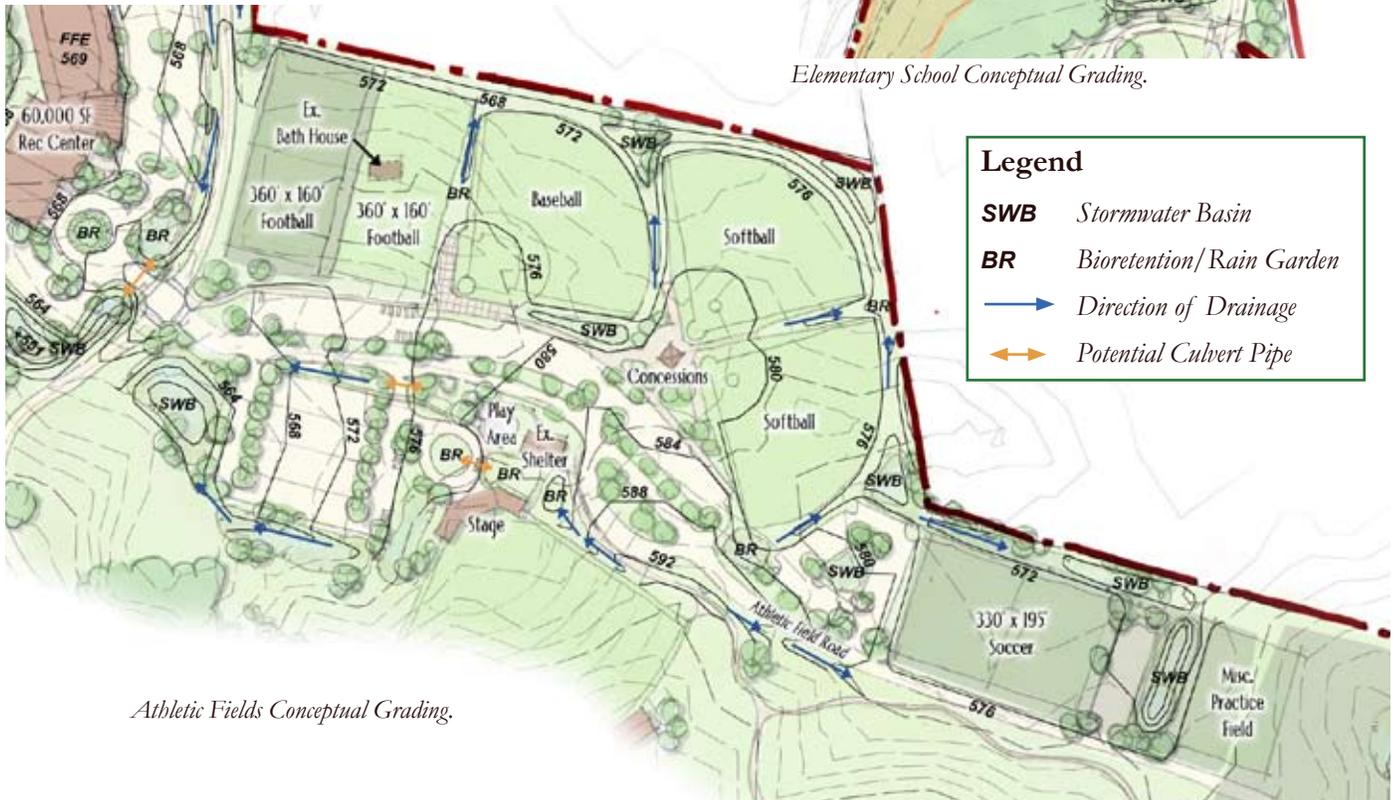
Rain Garden Diagram.



Recreation Center Conceptual Grading.



Elementary School Conceptual Grading.



Athletic Fields Conceptual Grading.

Legend	
SWB	Stormwater Basin
BR	Bioretention/Rain Garden
	Direction of Drainage
	Potential Culvert Pipe

Implementation Plan

Action Plan

This Action Plan discusses construction priorities, phasing, and associated costs to clearly define how and when each element of the master plan should be implemented.

Phasing

The master plan is divided into 4 phases based on proximity of each element and logical need for access; spreading out funding needs; and publicly- and County-identified priorities. The phases shown below are intended to serve as a flexible guideline for implementing the total master plan over then next 10 or more years. As funding and priorities change, elements can be moved back and forth between phases.

Phasing Highlights...

Phase I (0-3 Years)

- *Entrance Roads & Trails*

Phase II (3-5 Years)

- *Athletic Fields*

Phase III (5-10 Years)

- *Event & Stage Area*

Phase IV (+10 Years)

- *Recreation Center*

Phase I (0-3 Years)

This phase is intended to be implemented within the next 3 years. It contains elements that are able to be constructed or improved immediately to ensure the public can be using the park as soon as possible. Due to traffic and safety requirements, the VDOT-standard entrance must be installed before the public can utilize the park.

- VDOT entrance
- Improve existing access road with asphalt paving
- Access road and parking for future athletic fields
- Crushed stone walking trails
- Hiking trails through woods
- Disc golf parking lot (to serve as trailhead)
- Playgrounds near barn
- Improve tent platforms for primitive camping
- Required road and parking lot lighting

Phase II (3-5 Years)

This phase is intended to be implemented within the next 5 years. It contains many of the active recreation elements such as athletic fields and disc golf.

- Softball and baseball fields
- Rehabilitate barn
- Improve existing gravel road
- Canoe launch and steps
- Disc golf and shelters
- Interpretive signs at Outdoor Educational Area
- Required road, parking lot, and athletic field lighting

Phase III (5-10 Years)

This phase is intended to be implemented within the next 10 years. It contains primarily the event and stage elements along with additional practice fields.

- Demolish existing stage and build new
- Stage parking
- Playground near stage
- RV parking and hook-ups
- Demolish upper shelter
- Reinforced grass overflow parking
- Gazebo and parking
- Rehabilitate residence
- Concession stand
- Dog park, parking, and shelter

Phase IV (+10 Years)

This phase is intended to be implemented no sooner than 10 years. It contains large-scale elements such as the recreation center and fire and rescue complex.

- Recreation Center
- Fire & Rescue Training Complex
- Elementary School

Cost Estimates

The purpose of the cost estimates is to give the County enough information to guide planning and budgeting efforts throughout all phases of the master plan. Detailed cost estimates and designs will need to be prepared for each program element.

Cost estimates were prepared for each phase of the master plan as described in the Action Plan. Within each phase, costs were developed for individual elements such as earthwork, new buildings, benches, and lighting. The costs were developed using 2009 dollars and may fluctuate depending on material and labor costs at the actual time of installation. Costs were based on recent prices for completed projects in the region, VDOT bid tabulations, and RS Means cost data. The cost estimates are shown on subsequent pages.

Each phase cost includes general numbers for mobilization, earthwork, erosion and sediment control and other work that must be done each time a new phase is started. Therefore, the phases cannot simply be added together to get a total project cost.

In addition, costs for utility improvements were included only in Phase II, where capacity-using structures are first proposed. These costs may change phases or be replaced with numbers for connecting to Front Royal's systems as the park develops.

Costs By Phase...

Phase I (0-3 Years)

\$1,763,091

Phase II (3-5 Years)

\$2,370,494

Phase III (5-10 Years)

\$2,437,215

Phase IV (+10 Years)

Recreation Center Only

\$18,000,000

Fishnet Park Master Plan

Warren County, VA

OVERVIEW

Landscape Estimate of Probable Cost

11/6/2009

Prepared by: Land Planning & Design Associates, Inc.

JLB

COST BY PHASE

Phase 1 (0-3 Years)	\$	1,763,091.0
Phase 2 (3-5 Years)	\$	2,370,494.5
Phase 3 (5-10 Years)	\$	2,437,215.0
Phase 4 (+10 Years)(Recreation Center)	\$	18,693,026.0

*Phase 4 Individual Building Potential Costs

Recreation Center	\$	15,000,000.0
Elementary School (To be completed by others)	\$	15,000,000.0
Fire/Rescue Training Complex	\$	3,500,000.00

***Costs represent 2009 dollars and are dependent on fluctuations in material and labor costs over time. More detailed construction cost estimates should be completed when each element is considered for implementation.**

Fishnet Park Master Plan

Warren County, VA

PHASE I (0 to 3 Years)

Landscape Estimate of Probable Cost

Prepared by: Land Planning & Design Associates, Inc.

11/6/2009

JLB

Product Info.		QTY.	UNIT	UNIT PRICE	TOTAL
Sitework & Mobilization					
Mobilization, Permits, etc.		1	EA	\$7,500.00	\$ 7,500.00
Cut to Fill	Roads	15,000	CY	\$5.00	\$ 75,000.00
Erosion & Sediment Control Measures		1	LS	\$10,000.00	\$ 10,000.00
				Sub total	\$ 92,500.00
Roads & Parking					
Commercial Entrance	Asphalt, sub-base, curb & gutter, striping, signs	1	LS	\$15,000.00	\$ 15,000.00
State Road (Improve Existing Road)	24' wide, Asphalt, sub-base, striping	1	LS	\$365,000.00	\$ 365,000.00
Athletic Field Road (No Parking)	24' wide, Asphalt, sub-base, striping	1	LS	\$220,000.00	\$ 220,000.00
Athletic Field Parking (ball fields)	Asphalt, sub-base, striping	1	LS	\$360,000.00	\$ 360,000.00
Disc Golf Parking/Trailhead	Gravel, Wheel stops	1	LS	\$15,000.00	\$ 15,000.00
				Sub total	\$ 975,000.00
Trails					
Crushed Stone Trail	8" 21-A Gravel (no geotech fabric)	1,970	TONS	\$35.00	\$ 68,950.00
Hiking Trail Improvements	Grading, Drainage, Surface Prep, Clearing	9,175	LF	\$4.00	\$ 36,700.00
Scenic Overlooks	Grading, Retaining Timbers, Clearing	3	LS	\$2,500.00	\$ 7,500.00
				Sub total	\$ 113,150.00
Site Lighting					
Street/Parking Lighting	Kim Archetype LED (roads & parking lots)	25	EA	\$3,500.00	\$ 87,500.00
				Sub total	\$ 87,500.00
Furnishings					
Bicycle Racks		2	EA	\$750.00	\$ 1,500.00
Benches		4	EA	\$1,000.00	\$ 4,000.00
Trash Receptacle		2	EA	\$750.00	\$ 1,500.00
Signage ADA parking	Trailhead	12	EA	\$250.00	\$ 3,000.00
Signage Wayfinding - Small	Trailhead and Playground	2	EA	\$500.00	\$ 1,000.00
Entrance Sign		1	EA	\$5,000.00	\$ 5,000.00
Play Equipment - Ages 2-5	Near Barn (equipment and surfacing)	1	LS	\$20,000.00	\$ 20,000.00
Play Equipment - Ages 5-12	Near Barn (equipment and surfacing)	1	LS	\$25,000.00	\$ 25,000.00
				Sub total	\$ 61,000.00
Landscape					
Shade Trees		60	EA	\$450.00	\$ 27,000.00
Ornamental Trees		10	EA	\$375.00	\$ 3,750.00
Shrubs		20	EA	\$35.00	\$ 700.00
Permanent Seed Mix		95,000	SF	\$0.25	\$ 23,750.00
Bed Preparation	6 inches deep	10	CY	\$6.00	\$ 60.00
Mulch	3 inches deep	10	CY	\$40.00	\$ 400.00
				Sub total	\$ 55,660.00
				Subtotal	\$ 1,602,810.00
				10% Contingency	\$ 160,281.00
				TOTAL	\$ 1,763,091.00

Fishnet Park Master Plan

Warren County, VA

PHASE II (3 to 5 Years)

Landscape Estimate of Probable Cost

Prepared by: Land Planning & Design Associates, Inc.

11/6/2009

JLB

Product Info.		QTY.	UNIT	UNIT PRICE	TOTAL
Sitework & Mobilization					
Mobilization		1	EA	\$5,000.00	\$ 5,000.00
Cut to Fill	Parking lots, shelter slabs	20,000	CY	\$5.00	\$ 100,000.00
Finish Grading	Ball fields	280,000	SF	\$1.00	\$ 280,000.00
Erosion & Sediment Control Measures		1	LS	\$10,000.00	\$ 10,000.00
Utility Improvements (Septic)	One new well (Option 2 revised)	1	LS	\$622,000.00	\$ 622,000.00
Utility Improvements (Water)	Mass Drainfield (Option 1)	1	LS	\$428,000.00	\$ 428,000.00
Sub total					\$ 1,445,000.00
Roads & Parking					
Gravel Road Improvements	South of Athletic Field Access Rd.	1,000	TON	\$35.00	\$ 35,000.00
Barn Parking & Access Road	Gravel, Wheel stops	1	LS	\$150,000.00	\$ 150,000.00
Barn Terrace	Flagstone	800	SF	\$15.00	\$ 12,000.00
Concrete Sidewalks & Slabs	Shelters and sidewalks	14,000	SF	\$6.00	\$ 84,000.00
Sub total					\$ 281,000.00
Buildings & Structures					
Existing Barn Rehabilitation	plumbing, structural, roof, etc.	1	LS	\$150,000.00	\$ 150,000.00
Canoe Launch & Steps	Concrete Pad & Steps	1	LS	\$7,500.00	\$ 7,500.00
Sub total					\$ 157,500.00
Athletic Fields					
Baseball (90' Baseline & 300' Foul Line)	Turf, Irrigation, Fencing, Bleachers, Dugout, Etc.	1	LS	\$78,000.00	\$ 78,000.00
Softball (65' Baseline & 275' HR Fence)	Turf, Irrigation, Fencing, Bleachers, Dugout, Etc.	2	LS	\$70,000.00	\$ 140,000.00
Sub total					\$ 218,000.00
Disc Golf					
Disc Golf Equipment	Baskets - Permanent Install	18	EA	\$400.00	\$ 7,200.00
Disc Golf Shelters	Standard timber frame w/ asphalt shingle	2	LS	\$25,000.00	\$ 50,000.00
Sub total					\$ 57,200.00
Site Lighting					
Street/Parking Lighting	Kim Archetype LED (roads & parking lots)	15	EA	\$3,500.00	\$ 52,500.00
Athletic Fields	Model provided by County, practice and ball fields	15	EA	\$5,000.00	\$ 75,000.00
Sub total					\$ 127,500.00
Furnishings					
Bicycle Racks		2	EA	\$750.00	\$ 1,500.00
Benches		3	EA	\$1,000.00	\$ 3,000.00
Trash Receptacle		2	EA	\$750.00	\$ 1,500.00
Signage ADA parking		2	EA	\$250.00	\$ 500.00
Signage Wayfinding - Small		2	EA	\$900.00	\$ 1,800.00
Interpretive Signs		4	EA	\$500.00	\$ 2,000.00
Sub total					\$ 10,300.00
Landscape					
Shade Trees		20	EA	\$450.00	\$ 9,000.00
Ornamental Trees		5	EA	\$375.00	\$ 1,875.00
Permanent Seed Mix		110,000	SF	\$0.25	\$ 27,500.00
Mulch	3 inches deep	3	CY	\$40.00	\$ 120.00
Sub total					\$ 38,495.00
Subtotal					\$ 2,154,995.00
10% Contingency					\$ 215,499.50
TOTAL					\$ 2,370,494.50

Fishnet Park Master Plan

Warren County, VA

PHASE III (5 to 10 Years)

Landscape Estimate of Probable Cost

Prepared by: Land Planning & Design Associates, Inc.

11/6/2009

JLB

Product Info.		QTY.	UNIT	UNIT PRICE	TOTAL
Sitework & Mobilization					
Mobilization		1	EA	\$7,500.00	\$ 7,500.00
Cut to Fill	Practice fields, stage parking	35,000	CY	\$5.00	\$ 175,000.00
Finish Grading	pPractice fields	212,000	SF	\$1.00	\$ 212,000.00
Erosion & Sediment Control Measures		1	LS	\$10,000.00	\$ 10,000.00
Electric Hook-ups for RVs		10	EA	\$ 350.00	\$ 3,500.00
				Sub total	\$ 408,000.00
Roads & Parking					
Gazebo Parking	Gravel, Wheel stops	1	LS	\$16,000.00	\$ 16,000.00
Concrete Sidewalks & Slabs	Gazebo, concessions area, dog park shelter	16,500	SF	\$6.00	\$ 99,000.00
Reinforced Grass Surface	Parking Lot Above Stage	120,000	SF	\$1.70	\$ 204,000.00
Stage Parking	Asphalt, sub-base, striping	1	LS	\$340,000.00	\$ 340,000.00
RV parking area	Asphalt, sub-base, striping	1	LS	\$48,000.00	\$ 48,000.00
Practice Field Parking	Asphalt, sub-base, striping	1	LS	\$56,000.00	\$ 56,000.00
Dog Park Parking & Access Road	8" Gravel, Wheel stops	1	LS	\$25,000.00	\$ 25,000.00
				Sub total	\$ 788,000.00
Buildings & Structures					
Demolish Upper Shelter	demo, haul, cap utilities	1	LS	\$7,500.00	\$ 7,500.00
Demolish & Construct New Stage		1	LS	\$500,000.00	\$ 500,000.00
Demolish Bath House	demo, haul, cap utilities	1	LS	\$15,000.00	\$ 15,000.00
Gazebo	standard structure, metal roof, wood frame	1	LS	\$20,000.00	\$ 20,000.00
Concession Stand	24' x 28' bathrooms, storage, concession, electric, fixtures	1	LS	\$125,000.00	\$ 125,000.00
Rehabilitate Residence	testing & inspections; roof, windows, paint, etc.	1	LS	\$75,000.00	\$ 75,000.00
Dog Park Shelter	standard park shelter	1	LS	\$25,000.00	\$ 25,000.00
				Sub total	\$ 767,500.00
Dog Park					
Fencing	Wood with wire mesh	1,500	LF	\$25.00	\$ 37,500.00
Waste Containers	Dogi-Pot	2	EA	\$250.00	\$ 500.00
				Sub total	\$ 38,000.00
Site Lighting					
Street/Parking Lighting	Kim Archetype LED	18	EA	\$3,500.00	\$ 63,000.00
Athletic Fields	Model provided by County	8	EA	\$5,000.00	\$ 40,000.00
				Sub total	\$ 103,000.00
Furnishings					
Benches		4	EA	\$1,000.00	\$ 4,000.00
Trash Receptacle		2	EA	\$750.00	\$ 1,500.00
Signage ADA parking		8	EA	\$250.00	\$ 2,000.00
Signage Wayfinding - Small		2	EA	\$900.00	\$ 1,800.00
Play Equipment - Ages 2-5	At Ball Fields, surfacing	1	LS	\$20,000.00	\$ 20,000.00
				Sub total	\$ 29,300.00
Landscape					
Shade Trees		40	EA	\$450.00	\$ 18,000.00
Ornamental Trees		10	EA	\$375.00	\$ 3,750.00
Shrubs		20	EA	\$35.00	\$ 700.00
Permanent Seed Mix	includes practice field seeding	388,000	SF	\$0.25	\$ 97,000.00
Mulch	3 inches deep	10	CY	\$40.00	\$ 400.00
				Sub total	\$ 119,850.00
				Subtotal	\$ 2,215,650.00
				10% Contingency	\$ 221,565.00
				TOTAL	\$ 2,437,215.00

Fishnet Park Master Plan

Warren County, VA

PHASE IV (+10 Years)

Landscape Estimate of Probable Cost

Prepared by: Land Planning & Design Associates, Inc.

11/6/2009

JLB

Product Info.	QTY.	UNIT	UNIT PRICE	TOTAL
Sitework & Mobilization				
Mobilization	1	EA	\$10,000.00	\$ 10,000.00
Cut to Fill (Rec Center)	33,000	CY	\$5.00	\$ 165,000.00
Finish Grading	53,000	SF	\$1.00	\$ 53,000.00
Erosion & Sediment Control Measures	1	LS	\$10,000.00	\$ 10,000.00
Sewer Enhancements	1	LS	\$ 841,500.00	\$ 841,500.00
Water Enhancements	1	LS	\$ 411,000.00	\$ 411,000.00
			Sub total	\$ 1,490,500.00
Roads & Parking				
Parking Lot	1	LS	\$350,000.00	\$ 350,000.00
Concrete Sidewalks	5,750	SF	\$6.00	\$ 34,500.00
			Sub total	\$ 384,500.00
Buildings & Structures				
Recreation Center	1	LS	\$15,000,000.00	\$ 15,000,000.00
			Sub total	\$ 15,000,000.00
Site Lighting				
Parking Lighting	15	EA	\$3,500.00	\$ 52,500.00
			Sub total	\$ 52,500.00
Furnishings				
Signage ADA parking	4	EA	\$250.00	\$ 1,000.00
Signage Wayfinding - Small	1	EA	\$900.00	\$ 900.00
			Sub total	\$ 1,900.00
Landscape				
Shade Trees	30	EA	\$450.00	\$ 13,500.00
Ornamental Trees	10	EA	\$375.00	\$ 3,750.00
Shrubs	30	EA	\$35.00	\$ 1,050.00
Permanent Seed Mix	182,000	SF	\$0.25	\$ 45,500.00
Bed Preparation	10	CY	\$6.00	\$ 60.00
Mulch	10	CY	\$40.00	\$ 400.00
			Sub total	\$ 64,260.00
			Subtotal	\$ 16,993,660.00
			10% Contingency	\$ 1,699,366.00
			TOTAL	\$ 18,693,026.00

Funding Strategy Plan

The funding strategy plan outlines existing and potential funding sources for each of the major elements of the master plan. This includes the athletic fields, recreation center, disc golf, dog park, and other larger-scale elements. The associated matrix will assign appropriate funding sources to each element for easy reference.

Potential funding sources for Fishnet Park include:

- Capital Improvement Program Budget
- Bonds
- Parks & Recreation Maintenance Budget
- State Grants
- Proffers
- Fundraisers & Volunteer Labor

Most likely, the County will need to rely on a mix of funding sources in order to implement any one element. It will be up to the County Administrator, Parks & Recreation Director, and Grants Coordinator—among other County staff—to determine the appropriate and successful mix.

Capital Improvement Program Budget

The Capital Improvement Program is intended to assist the County's Planning Commission in developing a budget to implement needed projects. Warren County's CIP includes major capital projects that are non-recurring, have a useful life of more than 5 years, and have a cost that exceeds \$25,000 for general projects and \$100,000 for school projects.

Bonds

Bonds should be used to fund big-ticket items such as the Recreation Center and Fire & Rescue Training Complex.

Parks & Recreation Maintenance Budget

Smaller-scale elements that can be done in-house by Parks & Recreation staff can be assigned to the Parks & Recreation budget. These elements include the dog park fencing, trail construction, shelter demolition, and gravel road improvements.

State Grants

Virginia State agencies such as the Department of Conservation and Recreation (DCR) and the Virginia Department of Transportation (VDOT) administer multiple grants that are directed specifically toward recreation projects. Recreation Access Grants are available through VDOT and can be used to build roads in parks and recreation areas. DCR grants can be used to build recreation projects such as trails, playgrounds, and trailheads. Grants take time to apply for and receive and typically have a checklist of requirements attached to the money. Grants also typically work as reimbursements where the County will have to pay the consultant or contractor from existing funds and then apply for reimbursement through the State.

Proffers

Warren County has the ability to accept proffers from private developers. The County determines the amount that a developer can proffer based on what the new development will cost the County in terms of new infrastructure and public facilities, such as sewer lines and schools. The developer can offset these costs by proffering cash or project work that the County would normally have to pay for themselves. For instance, a residential developer who is building a subdivision could offer to pay for a parking lot, picnic shelter, or interpretive signs at Fishnet to offset the cost that would be incurred by bringing additional residents into the County. The County's proffer policy is available at:

<http://www.warrencountyva.net/documents/profferpolicy.pdf>

Fundraisers and Volunteer Labor

Fundraisers and volunteer labor are appropriate for smaller projects, particularly those that will be of greater use to a specific group. For example, local disc golf enthusiasts could be called upon to raise money for and help build the disc golf course at Fishnet Park. Another example would be local social clubs, such as the Rotary or Ruritan Club, that help raise money for and build playgrounds.

Sponsorship/Partnerships

Sponsorships and partnerships garner the support of local businesses, patrons, and donors who could relieve some of the financial burden of building Fishnet Park from County taxpayers. This form of funding also helps to build a sense of local ownership and engenders community pride.

Sponsorships are typically done through advertising in program guides, sports fields, or facility naming; this would mesh well with the athletic facilities and games envisioned at Fishnet Park.

Partnerships could be formed through non-profit entities, for-profit event companies, park foundations, and vendor contracts. Partnerships could generate revenue for the park to help defray the cost of implementation or operations.

Phase I	Funding Source												Approximate Cost*			
	Capital Improvements Budget	Capital Improvements Budget	Bonds	General Obligation Bonds	General County Funds	Parks & Rec Maintenance Budget	State Grants	VA Recreational Trails Grant	DCR Land & Water Conservation Fund	Recreation Access Funds	Other Sources	Fundraisers		Profifers	Volunteer Labor	Sponsorships/Partnerships
VDOT Entrance									X				X			\$15,000.00
Improve Access Road									X				X			\$320,000.00
Atheltic Field Road		X							X				X			\$185,000.00
Walking Trails		X			X		X	X					X	X		\$51,600.00
Hiking Trails		X			X		X	X			X		X	X		\$31,200.00
Trailhead		X			X		X	X					X	X		\$22,000.00
Playgrounds		X			X			X			X	X	X	X		\$42,000.00
Phase II																
Softball Fields		X						X					X			\$140,000.00
Baseball Fields		X						X					X			\$78,000.00
Athletic Field Parking		X						X	X				X			\$360,000.00
Improve Gravel Road		X			X				X				X			\$36,750.00
Rehabilitate Barn		X														\$250,000.00
Disc Golf					X			X			X		X	X		\$7,200.00
Disc Golf Shelters		X						X								\$50,000.00
Disc Golf Parking		X						X								\$15,000.00
Canoe Launch & Steps		X			X			X								\$7,500.00
Intepretive Signs		X			X			X					X			\$2,000.00
Phase III																
Stage		X													X	\$500,000.00
Stage Parking		X														\$340,000.00
Playground		X						X			X	X	X	X		\$18,000.00
RV Hook-ups & Pking.					X											\$51,500.00
Concession Stand		X											X		X	\$125,000.00
Demo Shelter		X			X											\$7,500.00
Demo Bath House		X			X											\$15,000.00
Reinforced Grass Pking.		X			X			X								\$204,000.00
Gazebo & Pking.		X						X								\$36,000.00
Dog Park & Pking.					X			X				X	X	X		\$63,000.00
Dog Park Shelter		X			X			X				X				\$25,000.00
Practice Fields		X						X				X				\$400,000.00
Rehab. Residence		X											X	X		\$50,000.00
Phase IV																
Recreation Center		X		X				X				X			X	\$15,000,000.00
Fire & Rescue Complex		X		X							X	X			X	\$2,500,000.00

*Approximate costs are for budgeting purposes only. Costs in this column do not include associated costs such as mobilization, erosion and sediment control, permitting, and contingencies. Refer to the cost estimates in this report for complete costs per phase.

Fishnet Park Master Plan Funding Strategy Matrix.

Phase I (0-3 Years)			
Funding Source*	Max. Amount**	Applies to	Comments
CIP Budget	\$600,000.00	General Use	\$200,000/year
Recreation Access Funds	\$250,000.00	Entrance and Athletic Field Roads	Add'l \$100,000 if matched on a dollar-by-dollar basis from County from sources other than highway funds
Recreation Trails Grant	\$300,000.00	Walking & Hiking Trails	Requires 20% match from County (max. grant amount is \$100,000, amount shown is per year)
Land & Water Conservation Fund	\$300,000.00	General Recreation Elements	Requires 50% match (max project cost is \$200,000; amount shown is \$100,000 per year to be provided by grant)
Parks & Rec Budget	\$30,000.00	Trails, Playgrounds, Signs	Varies By Year (estimated \$10,000/year)
Potential Donations	\$45,000.00	Playgrounds	Fundraisers, In-Kind Labor, Proffers, etc.
TOTAL FUNDING	\$1,525,000.00		
TOTAL COST	\$1,763,091.00		
SHORTFALL	(\$238,091.00)		
Phase II (3-5 Years)			
Funding Source	Max. Amount	Applies to	Comments
CIP Budget	\$400,000.00	General Use	\$200,000/year
Recreation Access Funds	\$250,000.00	Gravel Road	Add'l \$100,000 if matched on a dollar-by-dollar basis from County from sources other than highway funds
Recreation Trails Grant	\$200,000.00	Canoe Steps & Launch	Requires 20% match from County (max. grant amount is \$100,000, amount shown is per year)
Land & Water Conservation Fund	\$200,000.00	General Recreation Elements	Requires 50% match (max project cost is \$200,000; amount shown is \$100,000 per year)
VA Environmental Endowment Mini-Grant	\$2,000.00	Interpretive Signage	Must be applied for by school system/teacher
CVA Dept. Forestry Water Quality Improvement Fund	\$10,000.00	Rain Gardens	Cannot be used with new construction
Parks & Rec Budget	\$20,000.00	Gravel Road, Signage, etc.	Varies By Year (estimated \$10,000/year)
Potential Donations	\$57,200.00	Disc Golf & 2 Shelters	Fundraisers, In-Kind Labor, Proffers, etc.
TOTAL FUNDING	\$1,139,200.00		
TOTAL COST	\$2,370,494.00		
SHORTFALL	(\$1,231,294.00)		
Phase III (5-10 Years)			
Funding Source	Max. Amount	Applies to	Comments
CIP Budget	\$1,000,000.00	General Use	\$200,000/year
Recreation Access Funds	\$250,000.00	Gravel Road	Add'l \$100,000 if matched on a dollar-by-dollar basis from County from sources other than highway funds
Land & Water Conservation Fund	\$500,000.00	General Recreation Elements	Requires 50% match (max project cost is \$200,000; amount shown is \$100,000 per year)
Parks & Rec Budget	\$50,000.00	Shelter, Dog Park, RV Hook-ups, etc.	Varies By Year (estimated \$10,000/year)
Potential Donations	\$20,000.00	Playgrounds	Fundraisers, In-Kind Labor, Proffers, etc.
TOTAL FUNDING	\$1,820,000.00		
TOTAL COST	\$2,437,215.00		
SHORTFALL	(\$617,215.00)		

*Funding source numbers vary by agency and year and should be verified upon application for funding.

**Maximum grant amounts are shown at the highest possible allotment per project. The maximum amount is not always awarded to each successful applicant. Some amounts shown also assume successful applications for subsequent phase years.

Fishnet Park Master Plan Funding Capacity Matrix.

Appendix A
Needs Analysis

Needs Analysis & Program Recommendations *for the* Fishnet Property

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Prepared By:



With:

Draper/Aden Associates
OWPR Architects & Engineers
PROS Consulting

Executive Summary

Introduction

The Fishnet Property Needs Analysis and Program Recommendations was prepared as an initial step toward the final master plan document. The goal of this report is to provide a comparative analysis of available resources, public demand, and facility needs and to use those findings to create an appropriate program for the Fishnet Property. The completed master plan will draw on the program to locate facilities and amenities in conceptual layouts. In general, this document provides the basis for decision-making for the site.

Summary of Findings

The 219-acre Fishnet Property is limited in terms of utilities. When provided with a hypothetical development program, the civil engineering consultant found that neither existing water nor sewer systems would be adequate. The consultant recommends connecting the site to the Town of Front Royal utilities in order to support development.

A number of existing buildings and facilities can be adapted for continued use in the future park. The architectural consultant found that the barn, shelter, house, and other structures can be rehabilitated. The trailers should be removed, however. LPDA performed a site facilities evaluation and found that a number of smaller-scale features, such as the roads and campsites, could also be adapted for park use. The playground and horseshoe court should be removed.

VDOT had already approved a site entrance plan in 2004 that was done for Fishnet Ministries. This plan will allow for better site distance and access.

Public surveys showed a high demand for walking, hiking, and bike trails. Indoor recreation facilities and disc golf were also of higher importance. Stakeholder surveys, completed by organization leaders and others familiar with the parks and recreation system, had high demand for practice fields, indoor recreation facilities, and softball fields. These survey responses are similar to those completed for the 2007 Comprehensive Parks & Recreation Master Plan.

Demographics analysis show that Warren County is growing and the number of older adults and families will increase in the next fifteen years. This points to a need for more recreation facilities that serve these two segments.

Statistical data shows that there are shortfalls for indoor recreation space, baseball and softball fields, rectangular playing fields, and camping facilities. Other data shows that Virginians have higher participation rates for walking, running, swimming, day hiking, basketball, and softball. In general, the statistical data supports the public and stakeholder survey requests.

Comparative analysis of the public surveys and statistical data shows that priority should be placed on constructing trails, softball fields, indoor recreation facilities, and baseball fields. Other facilities can be incorporated as feasible.

A recommended program is shown at right, but it should be noted integrating these elements on the Fishnet Site is dependent on available space, utility capacity, parking capacity, and site conditions.



Recommended Program Elements...

- *Recreation Center*
- *Trails*
- *Softball & Baseball Fields*
- *Rectangular Practice Fields*
- *Disc Golf*
- *Playgrounds*
- *Camping Facilities*
- *Existing Barn*
- *Existing Bathrooms*
- *Existing Residence*
- *Stage & Event Space*
- *Picnic Areas*
- *Boat/Canoe Ramp*
- *Interpretive Signage*



Looking Southwest from Barn.



Madison Cave Isopod.



Entrance Drive heading south.



Looking northwest from campsite access road.

Site Analysis

Existing Conditions Overview

The Fishnet Property is an approximately 219-acre site located in Warren County, Virginia, to the northeast of the Town of Front Royal. The entrance to the site is located on Rockland Road/Rt. 658.

The property is bounded to the north by Rockland Road; to the west by the Norfolk & Western Railroad right-of-way; to the south by the Shenandoah River; and to the east by private property, including Fishnet Ministries which once owned the entirety of the Fishnet Property.

The topography is gently rolling and presents primarily as open, grass-covered fields with wooded areas growing mainly in the southern portion of the site. The topographic elevations range from about 550 feet above mean sea level (MSL) to 660 feet MSL.

The southern portion of the site also contains karst topography and numerous sinkholes and limestone outcroppings. These areas are not conducive to intense development and are better suited to features and activities that lay lightly on the land, such as primitive camping and hiking trails. In addition, the Madison Cave Isopod, a crustacean on the Federal Threatened and Virginia Endangered Species lists, has been confirmed on the Fishnet Site. There will be no development or access allowed in isopod area.

Numerous gravel roads cut through the site to provide access to various amenities; these roads appear well-maintained and may be able to be re-used in a park scenario.

Throughout most of the site, views within and out of the property are highly attractive, particularly when looking south toward the Shenandoah River. These pleasant views are somewhat interrupted when looking westward toward the light industrial development that grew up along the railroads tracks.

Existing Utilities

Draper Aden Associates (DAA) evaluated the existing conditions of the Fishnet property and explored water and wastewater utility options for future development of the property. The feasibility of using existing site capacity, as well as connecting to Front Royal’s public utility system is considered in this report. The complete report is located in Appendix A of this document. Appendix A also contains the report entitled “Outline of Design and Permitting Process and Procedures” that describes the steps needed to permit a site for increased development.

In reviewing documentation of existing well and septic systems on the site, DAA found there is only one well report on record with the Virginia Department of Health (VDH). This well is privately owned by Fishnet Ministries and would have to be purchased by Warren County to be considered for use on this development project. There are three existing drainfields on the site, also owned by Fishnet Ministries, with an aggregate capacity of 2,325 gpd. Front Royal’s public utility system extends near the Fishnet property, just west of the railroad tracks that define the western edge of the property. An existing conditions map as well as a water and sewer map is included in Appendix A of the DAA report. Three options for both water and sewer are included.

The Fishnet properties has one active well on record with the local health

department and three drainfields. The well is located on property currently owned by Fishnet Ministries, Inc. A copy of these records can be found in Appendix C of the DAA report. The well is a Class IIB community well, but it is privately owned. VDH records show that a 9 hour well pump test was conducted using a 12 gpm pump. The well could possibly yield up to 50 gpm, however, this was only shown over a period of 3 hours. This would have to be confirmed with a 24-hr pump test. Assuming a yield of 50 gpm, the well could provide 40,000 gpd if upgraded with a bigger well pump.

$$50\text{gpm} \times \text{ERC} / 0.5\text{gpm} \times 400\text{gpd} / \text{ERC} = 40,000 \text{ gpd}$$

(ERC = Equivalent Residential Connection)

In accordance with VDH regulations, waterworks serving more than 50 ERCs with wells as the source of supply must provide at least two water sources. The demand for 50 ERCs at 400gpd/ERC is 20,000 gpd. Any demand over 20,000 gpd will require more than one well. The demand proposed is 40,000 gpd and so at least two wells will be required.

$$400\text{gpd} / \text{ERC} \times 50 \text{ ERC} = 20,000 \text{ gpd}$$

The aggregate capacity of the existing drainfields is 2,325 gpd. Existing sewage disposal does not have the capacity to handle the proposed development and is also on land not planned to be purchased.

DAA was provided with a hypothetical site program in order to determine potential capacity needs. All calculations are located in the full report located in Appendix A. The hypothetical program included the following:

600-Student Elementary School	60,000 SF Recreation Center
Existing Barn w/ upgraded water service	3,000-seat Stadium
Existing Bathrooms	Nature Center
Existing Residence	Stage

Using the proposed capacity calculations, DAA came up with three options for water use and three options for sewer use. All three options are located in Appendix A, but the recommended options are described below.

Water Option 3 recommends connecting to the Town of Front Royal's public water system. The Town will not provide available capacity information of the system without a proposed future demand from the inquirer. A formal request letter will need to be sent to Front Royal through the Warren County Planning Department. Warren County connecting to the Town's utility will require a railroad bore and a railroad crossing permit. Obtaining a railroad crossing permit is very time consuming and can often be hard to fit into a project schedule.

Water Option 3, however, is most cost effective and most efficient given that the County does not plan on purchasing the well from Fishnet Ministries, the karst formations on the site are prohibitive, and the the capacity of new wells is uncertain.

Sewer Option 3 involves pumping all effluent to Front Royal's wastewater treatment plant. A letter detailing proposed demands will need to be submitted to the Town through the Warren County Planning Department to inquire whether the Town had the required capacity. This option will require a railroad bore and permit for the railroad crossing. Sewer Option 3 is the most favorable because it allows for increased capacity and is cost-efficient.



Seating near playground and house.

Utility Capacity...

- *Existing sewage disposal does not have the capacity to handle the hypothetical development and is also on land not owned by Warren County.*
- *Existing water facilities cannot meet the demand of the hypothetical development.*



Campsite with book-ups.



Trail along river.



Existing stage.

Existing Buildings & Facilities

OWPR Architects and Engineers provided the building and facility assessment. A summary is included below and the complete report can be found in Appendix B at the end of this document.

The nine buildings and facilities located on site are as follows:

Barn	House Trailer Near Stage
House	House Trailer On Hill
Toilet/Shower Facility	Utility Building
Stage	Lower Picnic Shelter
	Upper Picnic Shelter



Existing house/residence.

OWPR assessed the overall adaptability of each building and facility for potential inclusion into a park by looking at each feature in terms of code compliance, physical condition, physical appearance, program adaptability, and other categories. A feature with high adaptability generally ranked well in physical condition and appearance and would likely be easily and usefully integrated into a future park setting with minimal upgrades and repairs. A feature with low adaptability generally had too many physical problems, was unsightly, and could not be integrated into a park without numerous and costly repairs.

OWPR found that the Toilet/Shower Facility, Utility Building, and Upper and Lower Picnic Shelters had high adaptability. The Barn, House, and Stage had moderate adaptability. The two House Trailers had low adaptability and should be removed from the site.

LPDA assessed smaller-scale features using the same procedure for the following items:

Playground	Bathhouse Wood Steps
Roads	Campsite Hook-ups
Primitive Campsites	Mister/Shower Facility
Horseshoe Court	

LPDA found that the bathhouse wood steps and roads had high adaptability for future uses, the primitive campsite and campsite hook-ups had moderate adaptability, and the playground, horseshoe court, and mister/shower should be removed. An evaluation matrix for these features is located in Appendix B.



Existing Barn.

Site Access Overview

The entrance to the Fishnet Property is located on Rockland Road, just east of the Norfolk & Western Railroad crossing. At present, the entrance will likely not meet VDOT standards for access and sight distance due to proximity to the railroad crossing and horizontal curves on either side of the entrance.

There is, however, an entrance site plan on file with VDOT that shows improvements to the entrance that will allow traffic to safely access the site. This plan was submitted in 2004 by Racey Engineering, PLLC and approved by Arthur Boyce of VDOT the same year. This plan is located on the following page.



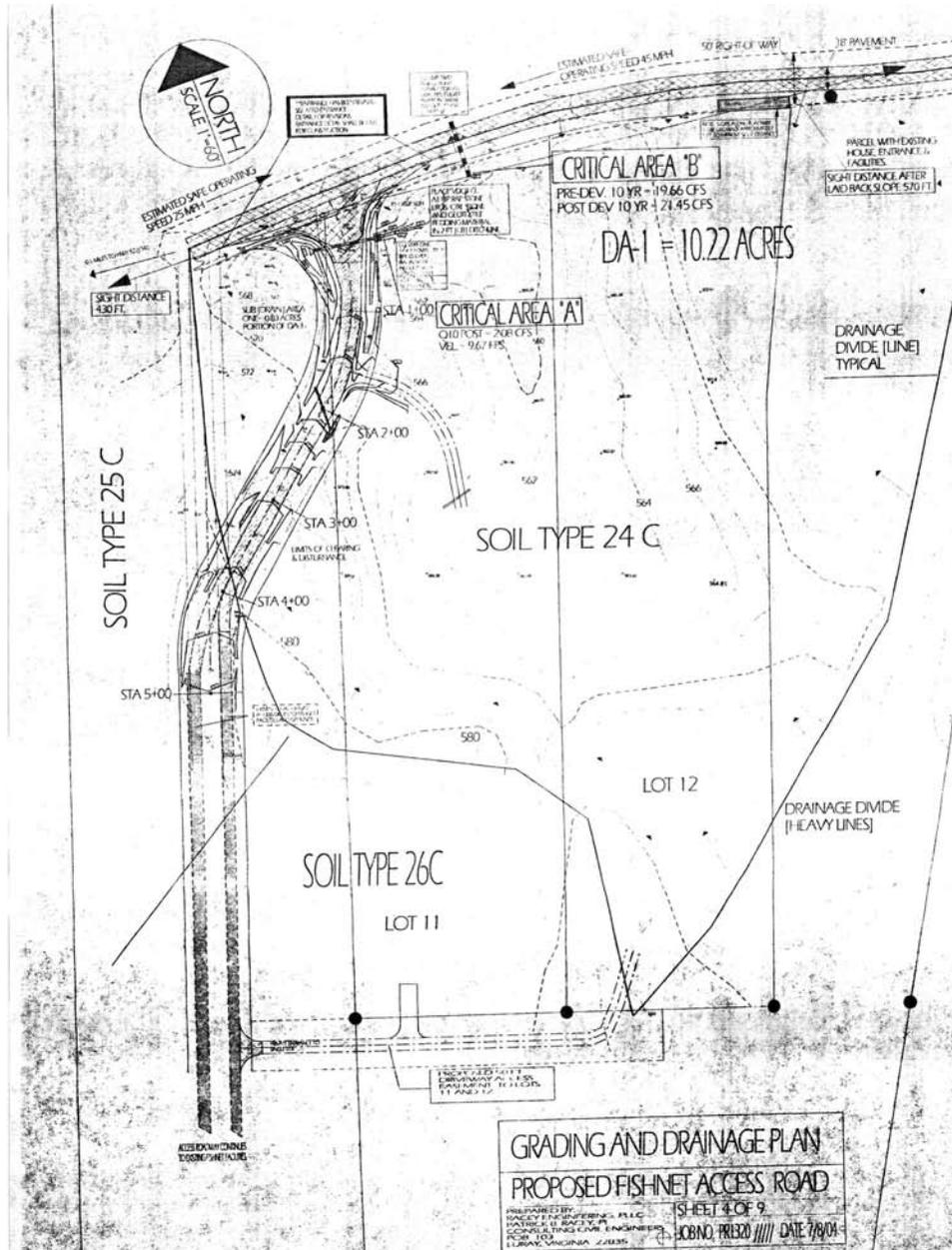
Bathhouse/toilet-Shower Facility Wood Steps.

The entrance plan shows a VDOT CG-11 Commercial Entrance with a 12-foot offset, CG-7 curb and gutter, and 4:1 taper lanes. The existing road has a 50-foot right-of-way and 18-foot pavement width. Although the capacity of the entrance in trips per day is not currently known, a note on the site plan states that the entrance design is an upgrade to an existing access road and will continue to serve the already existing traffic volume. Two new residential lots (in 2004) added 20 trips per day.

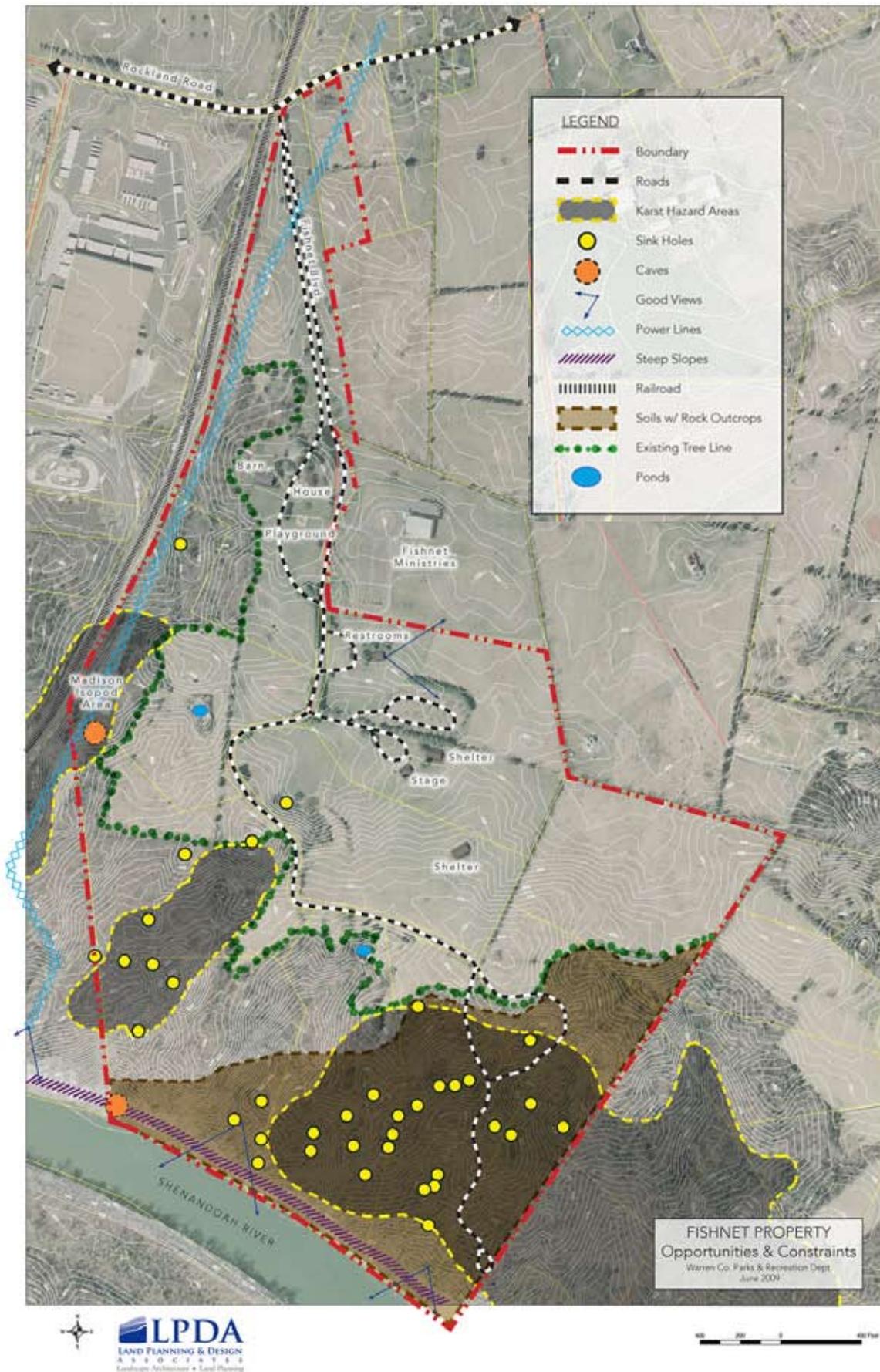
Warren County and VDOT have also had discussions concerning a possible overpass over the railroad tracks which would impact the Fishnet Property entrance. No plans or studies have been completed to date for this project.

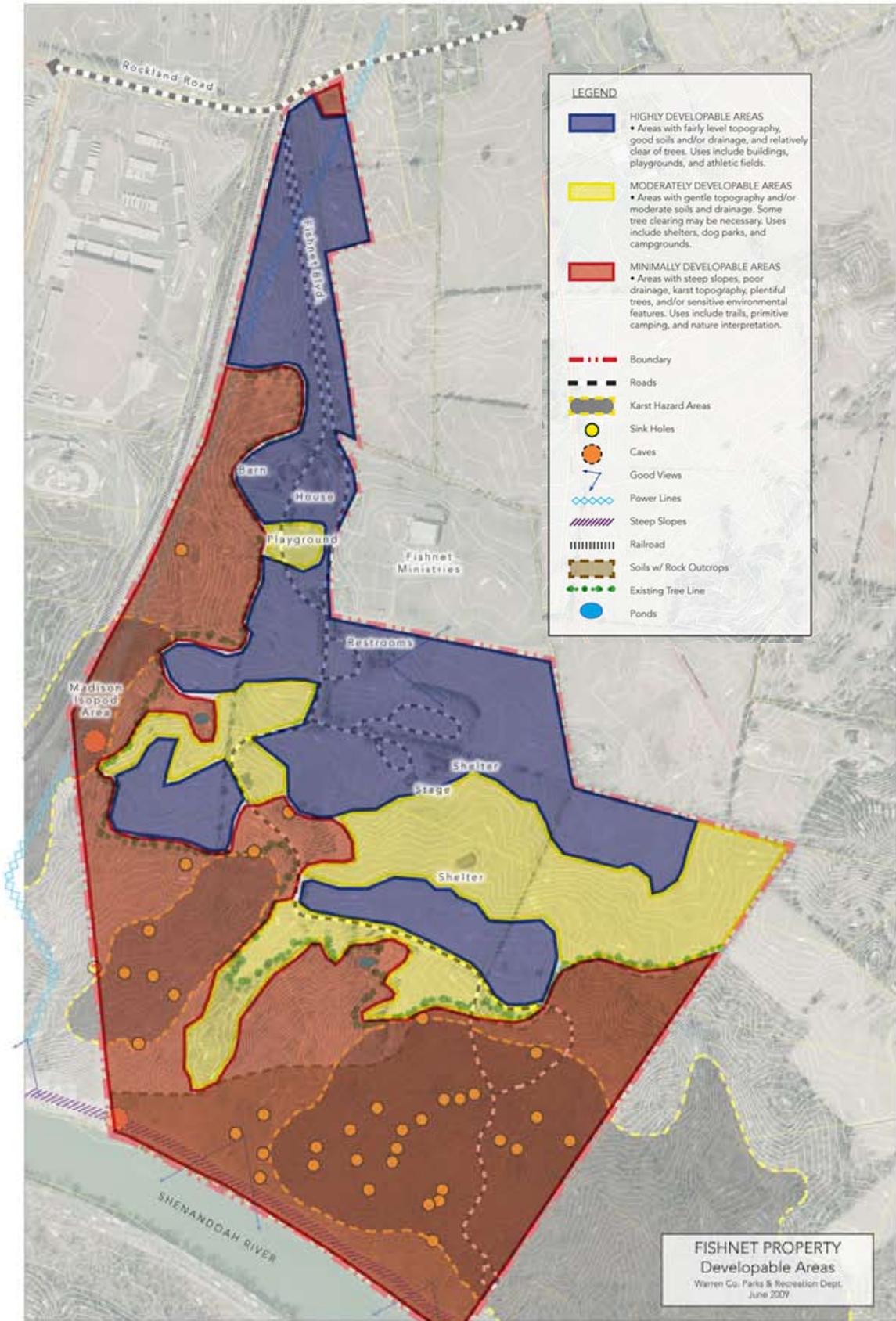


Across Rockland Road from site entrance.



2004 Site Entrance Plan prepared for Fishnet Ministries and approved by VDOT.





Needs Analysis

Introduction

The Needs Analysis identifies gaps in current parks and recreation system offerings based on input derived from four sources: public feedback, stakeholder feedback, relevant demographic data, and current athletic use data available for the area and region. These sources were combined in a comparative analysis of how the parks and recreation system functions at present and how it can be improved to better serve the citizens of Warren County. The findings from the Needs Analysis provide the basis for recommendations detailed later in this report.

Public and Stakeholder Input

The public was invited to a forum held on Tuesday, June 2, 2009 to learn more about the master planning process, provide comments, and to fill out a survey. Warren County also ran a slide show on Front Royal's public access television station which provided a link to an on-line survey. The on-line survey link was also available on Warren County's website. The public survey is located in Appendix C at the back of this report.

A stakeholder group was identified by the parks and recreation department and included various organization leaders whose groups regularly used or were involved with Warren County parks and recreation amenities. Stakeholders included softball and baseball coaches, parks commission members, county planning staff, and soccer and football league organizers. The stakeholder survey is also located in Appendix C at the back of this report.

The surveys provided the basis for an immediate understanding of where citizens saw areas for improvement in the parks and recreation system in terms of needed facilities and amenities.

In general, stakeholder respondents requested more athletic fields, both official and practice. Additional softball fields were the most requested item in this category, apparently due to the growing softball-playing community in Warren County. Another top request was for more indoor recreation facilities, such as gymnasium and meeting space.

Public responses were overwhelmingly in favor of additional trails for hiking, walking, and biking. Other requests included space for disc golf, indoor recreation facilities such as a gym or indoor pool, and a dog park.

Demographic Data

PROS Consulting prepared a demographic analysis for Warren County's current population as a way of gauging the County's growth rate and, in turn, how many parks and recreation facilities may be needed to meet future demand. The complete report is available in Appendix D.

From a demographic standpoint, Warren County's population grew by 15% between 2000 and 2008 and is projected to continue growing at a slower rate over the next 15 years. The projected population in 2023 is expected to be approximately 48,181 people.

The Warren County population by major age segment demonstrates a fairly balanced population breakup, though with an aging trend. The over-55 population is currently at 22% within Warren County but is projected to make up

Top 3 Stakeholder Requests...

- *Practice Fields (All Sports)*
- *Softball Fields*
- *Indoor Gym and Rec Facilities*

Top 3 Public Requests...

- *Hiking/Walking Trails*
- *Bike Trails*
- *Disc Golf*

30.3% of the population by 2023. Essentially, almost 1 in 3 individuals will be over age 55 by 2023. This is similar to national trends due to increased life expectancies and increasing numbers of baby boomers entering that age category. The 18-34 age segment will remain around 20% of the population in the next 15 years, while the under-18 population within the County will be decreasing.

Nationally, women's participation rates in sports or recreational activities are slightly lower than men's: 61% of women participate at least once a year in a sport or recreational activity compared to a 69% participation rate for men. However, women tend to outlive men and continue to be active later into their lives, which means that recreational opportunities should be provided for both genders at all stages of life. PROS also notes that the mature female demographic is opting for less team-oriented activities than their younger counterparts and instead shifting toward a more diverse selection of individual participant activities such as walking, swimming, and aerobics.

In sum, the demographic analysis tells us that the Warren County parks and recreation system needs to plan for an increased population that, although statistically older in the next 15 years, will remain diverse. Recreation activities and facilities need to be increased to meet growing demand and varied to ensure that all segments of the population have the opportunity to participate. Within the next 15 years, the parks and recreation system will need to adjust to meet the needs of the increasing active adult population by placing emphasis on community-wide special events; performing arts; therapeutic recreation programs; like skill programs; and family activities such as biking, walking, and general entertainment and leisure activities.

Athletic Use Data

Athletic use data was obtained from a number of sources and was used to determine what facilities shortfalls currently exist within the County parks and recreation system. Data was obtained from the 2007 Comprehensive Parks and Recreation Master Plan for Warren County; the 2007 Virginia Outdoors Plan; and the 2008 Superstudy of Sports Participation prepared by American Sports Data, Inc. These three sources provided statistical data that related what types of recreation activities Virginians and Warren County residents typically engage in and how many recreation facilities should exist in any given area based on population.

The Superstudy data showed that, of the activities typically undertaken within a public parks and recreation system, Virginians as a whole have high participation rates in walking and running; swimming; day hiking; basketball; and softball.

Public and stakeholder surveys completed for the 2007 Comprehensive Parks and Recreation Master Plan generally agree with surveys completed for the Fishnet Property as well as the Superstudy data. In 2007, survey respondents chose picnicking as the activity they participated in most with hiking, swimming, boating/canoeing, and bicycling following in descending order. When asked what type of new facilities Warren County residents would like to see integrated into the parks and recreation system, the most common response was trails, followed by a skate park, indoor recreation, and an indoor pool.

Clearly, the athletic use data available from past and current efforts shows

Demographic Snapshot...

- *The County population grew by 15% in the last 8 years*
- *The County population will continue to grow*
- *The County will contain more older adults and families over time*
- *County parks facilities and programs will need to cater to an aging and family-oriented population*

a strong tendency toward the use of trails for walking, hiking, running, and biking; a high need for athletic fields—softball fields, in particular; and a need for indoor recreation facilities that may house facilities such as a gymnasium, indoor pool, and meeting areas.

The Virginia Outdoors Plan (VOP) offers standards for how many facilities of a particular type should be located per number of population. For example, the plan recommends that an area should contain at least 1 baseball field for every 6,000 residents. These standards were applied to the current and projected Warren County population to determine where facility shortfalls existed. In other words, using the VOP standards and 2009 population data, it is possible to determine whether Warren County currently has enough baseball fields to meet demands or if more need to be constructed. This data was compiled into the matrix found on the following page. Population data was taken from the PROS Consulting demographic study located in Appendix D.

The matrix shows that there will be major shortfalls in indoor recreation facilities that will continue to worsen over the next 15 years without construction of some type of recreation center. There is also a need for baseball and softball fields, which was also evident from the stakeholder surveys. In general, rectangular fields for sports such as football, field hockey, and lacrosse are lacking. Also notable is the need for camping facilities. The matrix shows that there are currently sufficient numbers of tennis courts, soccer fields, and horseshoe pitches.

Analysis Findings

Based on the data above, it is clear that Warren County is growing and the parks and recreation system needs to grow along with it. The public and group leaders have recreational needs that need to be met and there is statistical data to back up these needs. When compared to the site analysis data, the final assessment is that the Fishnet Property can be developed as a district park in order to meet the demands of Warren County and its citizens.

The final step is to compare all the requests and data and prioritize the findings into a potential site program. The matrix on the opposite page, also used to determine service shortfalls and gaps earlier in this section, ranks facilities in order of high, moderate, and low priority. The priorities were determined by mitigating public and stakeholder demand with statistical demand. Where the two demands overlapped, a facility had high priority. Where the public or data demand existed but was not overwhelming, a facility had moderate priority. Where no demand existed or was negligible, or similar facilities were already proposed to be constructed, a facility was deemed to have low priority.

The recommend program described in the next section utilized these rankings to determine what facilities should be included in the park and what facilities could be worked in if possible. It should be noted that the matrix gives a general idea of programming requirements and a certain amount of flexibility should be maintained to allow for the removal or addition of certain elements.

According to the matrix, the facilities that have the highest priority were indoor recreation, trails, and softball and baseball fields. There is no current demand for outdoor basketball, dog parks, field hockey, horseshoes, lacrosse, running tracks, official soccer fields, or tennis and volleyball courts.

High Priority Facilities...

- *Indoor Recreation*
- *Trails*
- *Softball Fields*
- *Baseball Fields*

Needs Analysis and Priorities Matrix

PRIORITY	FACILITY TYPE	COUNTY STANDARD/ POPULATION	TOTAL NEED	EXISTING COUNTY FACILITIES	EXISTING SCHOOL FACILITIES	EXISTING PRIVATE FACILITIES	2009 Shortfall/ Surplus*	Proposed Facilities	2014 Shortfall/ Surplus*	2023 Shortfall/ Surplus*
High priority	Baseball Field	1/6000	6	2	0	1	(-4)	2	(-3)	(-4)
Moderate priority	Basketball (outdoor)	1/7000	5	4	0	1	(-1)	0	(-2)	(-3)
Low priority	Boat/Canoe Ramp	1/40 boats a day	2	1	0	0	(-1)	0	(-1)	(-2)
High priority	Camping	10ac/1000	379 AC	0	0	0	(-379 AC)	0	(-417 AC)	(-481 AC)
Moderate priority	Disc Golf	1/25000	1	0	0	0	(-1)	0	(-2)	(-2)
Low priority	Dog Park	<=>	1	0	0	0	(-1)	1	0	0
High priority	Field Hockey	1/25000	1	0	0	0	(-1)	0	(-2)	(-3)
Moderate priority	Fishing Locations	<=>	<=>	0	0	0	<=>	0	<=>	<=>
Low priority	Football Field	1/9000	4	0	0	1	(-4)	2	(-3)	(-3)
High priority	Horseshoes	1/9000	4	4	0	0	0	0	4	4
High priority	Indoor Rec Space	1/5 SF	75,914 SF	0	0	0	(-75,914 SF)	0	(-83,464 SF)	(-96,362 SF)
Moderate priority	Lacrosse	1/25000	1	0	0	0	(-1)	0	(-1)	(-2)
Low priority	Picnic areas	10 units/1000	38	24	0	5	(-14)	1	(-17)	(-23)
High priority	Running Track	<=>	0	0	0	2	0	0	0	0
Moderate priority	Soccer	1/6000	7	7	2	4	0	0	(-1)	(-2)
High priority	Sportball Field (Adult & Youth)	1/4000	9	4	0	2	(-5)	2	(-4)	(-6)
Moderate priority	Swim Pool Jr. Olympic	1/10000	4	2	0	2	(-2)	0	(-2)	(-3)
Low priority	Swim Pool Olympic	1/20000	2	0	0	0	(-2)	0	(-2)	(-2)
High priority	Tennis	1/5000	7	22	0	8	15	0	14	12
Moderate priority	Tents	5ac/1000	186	0	0	0	(-186)	0	-190	-208
Low priority	Trails	1 system/region	1	1	0	0	0	1	(-2)	(-2)
High priority	Volleyball	1/10000	4	3	0	0	(-1)	0	(-1)	(-2)



Priority is based on expressed demand and existing shortfalls

37,957
41,732
48,181

Estimated 2009 Population based on US Census Bureau
2014 shortfall based on projected population of
2023 shortfall based on project population of

*County facilities only; does not account for private or school facilities
<=> No expressed standard

Program Recommendations

Overview

The final master plan will strive to incorporate as many high and moderate priority facilities as feasible within the Fishnet Property, but the decision to include these items must be weighed against available space, parking limitations, topography and site conditions, and the ability to integrate utilities such as water and sewer. Once the program is refined, conceptual drawings will be developed that show potential locations for each facility.

The capacity analysis performed for the site determined that the capacity-using facilities listed below (Existing Barn, Existing Bathrooms, Existing Residence, Recreation Center, Stadium, and Stage) can all be integrated by connecting to the Town of Front Royal's existing sewer and water lines. This is all contingent on the Town's willingness and ability to accept additional utility demands from the Fishnet site. An elementary school could be located on site, according to the capacity analysis, although other utility options may become more feasible without the school.

Potential Program Elements...

- *Recreation Center*
- *Trails*
- *Softball & Baseball Fields*
- *Rectangular Practice Fields*
- *Disc Golf*
- *Playgrounds*
- *Camping Facilities*
- *Existing Barn*
- *Existing Bathrooms*
- *Existing Residence*
- *Stage & Event Space*
- *Picnic Areas*
- *Boat/Canoe Ramp*
- *Interpretive Signage*

Recommended Program

Based on the Site Analysis and Needs Analysis the following facilities are recommended for the Fishnet Property:

Recreation Center

- An indoor recreation center that contains a gymnasium, indoor pool, and meeting rooms. May be 60,000-70,000 total sf.
- Should be located on fairly level topography and in an area with good soils and no karst formations. Should be centrally located for access purposes. Will require upgraded sanitary, water, electric, and communication systems.
- Although recreation centers are typically centrally-located to the local population, the population growth in this area of the County may make a recreation center at Fishnet appropriate.

Trails

- Multiple trail types that can accommodate pedestrians and bicyclists. May include separate backcountry trails for mountain bikes, unpaved pedestrian-only hiking trails, and paved segments for strollers, rollerbladers, and persons with mobility problems.
- Trails can be located anywhere on the site depending on the need for handicap accessibility. All trails must be located in areas that are not environmentally sensitive.

Softball and Baseball Fields

- Depending on County needs, a mix of age-appropriate softball and baseball fields possibly surrounding a concessions and restroom facility. A stadium-type space may also be developed in conjunction with one of the fields.
- Ball fields must be located on level, well-drained ground and oriented north-south as much as possible. Nearby parking is preferred.

Rectangular Practice Fields

- Rectangular practice fields of varying sizes to accommodate football, soccer, and other field sports during non-game times. These fields do not have to be

official size.

- Require level, well-drained ground and a north-south orientation to the extent possible. Nearby parking is preferred.

Disc Golf

- Game similar to golf where a frisbee is thrown into an above-ground metal basket. Typically ranges from 9 to 18 holes, but averages 12 holes. An intermediate course may require 8-10 acres of land through a wooded condition.
- Disc golf may be able to be incorporated into some of the non-sensitive wooded locations on site but would have to be worked around sinkholes and hiking trails.

Playgrounds

- Play equipment for age groups 2-5 years and 5-12 years.
- Playgrounds should be located near parking and developed areas for ease of access and visual monitoring. ADA-accessibility is preferred for at least a portion of the play equipment.

Camping Facilities

- Small RV and primitive campsites that offer utilities and tent space respectively.
- Small RV sites need to be located near power, water, and sanitary facilities and require road access. Primitive campsites could be located on the existing platforms in the southern portion of the site. Composting toilets or portable toilet facilities could be developed nearby.
- Will require additional parks staff involvement for scheduling camp site use and ranger/police monitoring due to overnight use.

Existing Barn

- Can be rehabilitated and used for meetings, dances, or other group events. May require parking lot. Refer to facilities assessment for additional information.

Existing Bathrooms

- Can be used as bathroom facilities for camping and events. Refer to facilities assessment for additional information.

Existing Residence

- Can be rehabilitated for park offices, meeting space, or overnight facilities for either staff or park visitors. Refer to facilities assessment for additional information.

Stage & Event Space

- A new stage would allow for large-scale concerts, movies, or live performances. Stage size and design depends on potential uses.
- Can be located at site of existing stage to take advantage of topography for seating.

Picnic Areas

- Vary from shelters to open ground to picnic tables. Should include options for shade and sun.
- Existing shelters, amphitheater topography, or space near barn can be used.



Rectangular Playing Fields.



Stage.



Softball/Baseball Facility



Playground Equipment.



Primitive Camping.

Boat/Canoe Ramp

- Can be simple concrete slab with boat slide or more complex system depending on topography and location. Not intended for motorized boats.
- Located on river in southern part of site, most likely in southeast corner due to less steep conditions.

Interpretive Signage

- Ranges from multi-sided kiosks to small panels. Themes could be ecology and history (Madison Isopod, Karst topography, nearby Civil War history, and similar).
- Kiosks and signs located throughout the park on trails and gathering areas.

Other Compatible Program Elements

Although the demand was minimal, the Fishnet Property could prove to be a good location for the following elements. If parking, physical space, and funding are available after the higher priority facilities are incorporated into the plan, the elements below could further enhance the Fishnet site.



Dog Park.

Dog Park

- Varies in size, but should be at least 1 acre and surrounded by chain-link fence (or other fence with visually accessibility). Should have shade and good drainage.
- Already planned for Eastham property, although northern location may be useful as well. Can be located on varied topography.

Nature Center

- Varies in size from one to multiple rooms. May have restroom facilities or not. Contains educational materials, signs, exhibits. Can double as a meeting space with proper utility connections.
- May be located anywhere that a typical building could be constructed: good soils, drainage, and level topography. Ideally placed where education sessions can be moved outdoors to illustrate certain points.



Wooded Trails.

Fire/Rescue Training Facility

- Anywhere from 10 to 20 acres for classroom building, live burn training facility, concrete pond for water supply, concrete pad for vehicle extrications, a driving course for emergency vehicle training, and other features.
- Needs to be located in isolated place to limit trespassing and vandalism and ensure safety of civilian park users. Requires a mix of topography to support both building foundations and variable driving conditions.

Outdoor Basketball Court

- Full court basketball with official backboard heights and hoops. May be lighted and fenced.
- Requires level topography and adjacent parking. Could be placed near recreation center



Boat/Canoe Ramp.

Fishing Access

- River access for shoreline fishing and/or dock extended into water.
- Locate on river banks in southern portion of site.

Sanitary Capacity

It is likely that connecting to front Royal's sewer and water system is not feasible at this time due to costs and limited capacity. Therefore, the fishnet property will have to rely on septic fields. Due to site limitations including Karst topography, slopes, and slow-draining soils, the site may also be limited in the number and size of septic fields it can accommodate. In such a case, the number and size of capacity-using buildings (the recreation center, concessions facility, school, etc.) may have to be reduced, phased-in at a later date, or eliminated.

The gray areas on the concept show potential locations for septic fields based on a soil survey and topography. Where the septic field overlaps a site element, such as the practice fields, the element would need to be removed to accommodate a septic field. Septic fields cannot be placed below pavement or heavily-used lawn areas such as playing fields.

Stormwater Management

Stormwater will need to be managed as it flows from roofs and paved areas. This can be done through standard practices, such as retention ponds and swales, as well as through Low-Impact Development techniques such as rain gardens and filter strips. Other techniques for managing stormwater quantity and quality include using permeable pavers for terraces and parking lots and underground storage tanks for runoff. The method will vary depending on specific soil type, topography, and proximity to Karst features.

Fishnet Master Plan Concept

Legend

- Existing Trees
- Buildings
- Vehicular Circulation
- Pedestrian Circulation
- Playing Fields & Dog Park
- Potential Septic Drainfields
- Potential Stormwater Management Areas
- Madison Cave Isopod Preserve Area

It is not feasible for both the school and recreation center to be built on the site at this time. A 600-student elementary school will require more septic field capacity than can be located around the school site. The school may be phased in when front Royal utility connections are more feasible. Alternatively, the school could take the place of a Recreation Center depending on the greater need.

The play areas should be divided between older and younger children with plenty of seating. A small shelter could be used for shade and small events such as children's parties. The open lawn to the east could be reserved for picnic tables.

A 60,000 SF Recreation Center will require multiple septic fields or Town sewer connection to meet demand. The recreation center may need to be constructed in phases; additions may be made as increased utility capacity becomes available. A first phase should include an indoor gymnasium and meeting space. The center's location creates space for playing fields.

The existing Bath House may be retained until a new concessions facility is constructed. The Bath House may be removed in a future phase to allow for additional practice fields. If this building is retained, grading for the surrounding ball fields must be done carefully to avoid damaging

the existing stage should be demolished and replaced with a new, updated structure. A service drop-off is shown to the rear of the stage area for unloading and ADA access. For large events, overflow parking is located at the top of the hill; this could be a grass field or gravel lot. Off-site shuttle service may need to be implemented for additional parking.

Informal fields provide space for practices and pick-up games. If these fields are not needed, the space might be used as a septic field. The dog park will serve County residents north of front Royal. The shelter can be reserved for picnics.

A gazebo/band shell was located on the knoll due to particularly scenic views available in this location. The gazebo may be used as a rentable shelter and for small concerts.

The existing earthen platforms that line the road can be re-used as tent platforms for primitive camping. The road can also be used to haul canoes closer to the boat slide.

Hiking trails through the woods will be backcountry trails fit as closely as possible to existing grade. They must be routed to avoid sinkholes. The trails will be accessed from various trailheads located at parking lots throughout the park.

The Canoe launch will consist of a small concrete pad with wood slide boards to facilitate launching and retrieving canoes. A switchback trail and/or steps will need to be cut into the hillside to allow visitors to reach the riverbank. Canoe racks could be located near the slide to allow people to store their canoes while they camp in the park.

The Barn should be rehabilitated for use as meeting and event space. An outdoor terrace may be built adjacent to the barn doors for outdoor events. Additionally, an open lawn should be maintained on the lower level to serve as event space. Parking should be separated to preserve the

The miscellaneous practice field could serve any number of sports. This area could become a septic field to serve the recreation center.

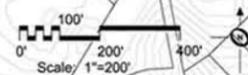
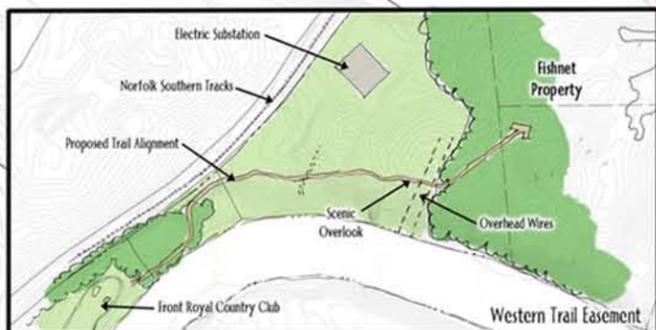
The trail through the Outdoor Educational Area can be used for environmental education. Interpretive signs may discuss the nearby Isopod presence, the adjacent sinkholes and pond, and other topics.

The Fire & Rescue Training Complex is smaller than requested due to space limitation. However, the complex can be expanded up to 5.5 acres. The complex must be ultimately designed to ensure the safety of park visitors and the surrounding environment.

A disc golf course can be accommodated on roughly 11 acres of land through the woods. The area shown avoids sinkholes and contains 18 holes. The course was based on "White Tees" layout through "Corridor" conditions. A small parking lot and shelter are located at the course beginning.

A trail will be incorporated on an easement obtained by the County. The trail will head east-west and terminate south of the power station. (See Inset Below)

Scenic overlooks will be incorporated into the trail that runs parallel to the river. These small earthen bump-outs may contain benches and/or interpretive signage. A small amount of selective clearing may be necessary to enhance the viewshed to the river.



Sanitary Capacity

It is likely that connecting to Front Royal's sewer and water system is not feasible at this time due to costs and limited capacity. Therefore, the Fishnet property will have to rely on septic fields. Due to site limitations including Karst topography, slopes, and slow-draining soils, the site may also be limited in the number and size of septic fields it can accommodate. In such a case, the number and size of capacity-using buildings (the recreation center, concessions facility, school, etc.) may have to be reduced, phased-in at a later date, or eliminated.

The gray areas on the concept show potential locations for septic fields based on a soil survey and topography. Where the septic field overlaps a site element, such as the practice fields, the element would need to be removed to accommodate a septic field. Septic fields cannot be placed below pavement or heavily-used lawn areas such as playing fields.

Stormwater Management

Stormwater will need to be managed as it flows from roofs and paved areas. This can be done through standard practices, such as retention ponds and swales, as well as through Low-Impact Development techniques such as rain gardens and filter strips. Other techniques for managing stormwater quantity and quality include using permeable pavers for terraces and parking lots and underground storage tanks for runoff. The method will vary depending on specific soil type, topography, and proximity to Karst features.

It is not feasible for both the school and recreation center to be built on the site at this time. A 600-student elementary school will require more septic field capacity than can be located around the school site. The school may be phased in when Front Royal utility connections are more feasible. Alternatively, the school could take the place of a Recreation Center depending on the greater need.

The play areas should be divided between older and younger children with plenty of seating. A small shelter could be used for shade and small events such as children's parties. The open lawn to the east could be reserved for picnic tables.

A 60,000 SF Recreation Center will require multiple septic fields or Town sewer connection to meet demand. The recreation center may need to be constructed in phases; additions may be made as increased utility capacity becomes available. A first phase should include an indoor gymnasium and meeting space. The center's location creates space for playing fields.

Fishnet Master Plan Concept

Legend

- Existing Trees
- Buildings
- Vehicular Circulation
- Pedestrian Circulation
- Playing Fields & Dog Park
- Potential Septic Drainfields
- Potential Stormwater Management Areas
- Madison Cave Isopod Preserve Area

PHASING

- Phase I (0 to 3 Years)
- Phase II (3 to 5 Years)
- Phase III (5 to 10 Years)
- Phase IV (-10 Years)

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The existing Bath House may be retained until a new concessions facility is constructed. The Bath House may be removed in a future phase to allow for additional practice fields. If this building is retained, grading for the surrounding ball fields must be done carefully to avoid damaging

the existing stage should be demolished and replaced with a new, updated structure. A service drop-off is shown to the rear of the stage area for unloading and ADA access. For large events, overflow parking is located at the top of the hill; this could be a grass field or gravel lot. Off-site shuttle service may need to be implemented for additional parking.

Informal fields provide space for practices and pick-up games. If these fields are not needed, the space might be used as a septic field. The dog park will serve County residents north of Front Royal. The shelter can be reserved for picnics.

A gazebo/band shell was located on the knoll due to particularly scenic views available in this location. The gazebo may be used as a rentable shelter and for small concerts.

The existing earthen platforms that line the road can be re-used as tent platforms for primitive camping. The road can also be used to haul canoes closer to the boat slide.

Hiking trails through the woods will be backcountry trails fit as closely as possible to existing grade. They must be routed to avoid sinkholes. The trails will be accessed from various trailheads located at parking lots throughout the park.

The Canoe Launch will consist of a small concrete pad with wood slide boards to facilitate launching and retrieving canoes. A switchback trail and/or steps will need to be cut into the hillside to allow visitors to reach the riverbank. Canoe racks could be located near the slide to allow people to store their canoes while they camp in the park.

