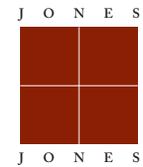


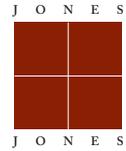
RAVENSDALE PARK MASTER PLAN
Ravensdale, Washington

prepared for
RAVENSDALE PARK FUND AND KING COUNTY PARKS

by
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April 2008





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TABLE OF CONTENTS



INTRODUCTION	2
Purpose	
Vision	
Goals	
Existing Park	
PUBLIC PROCESS	4
Participation	
Design Committee	
Public Meetings	
Overall Design Schedule	
PARK OPPORTUNITIES	6
Regional Context	
Historical Setting	
Rock Creek Valley Conservation Plan	
Natural Environment	
Access & Circulation	
Aesthetics	
Green Infrastructure	
COMMUNITY OPEN SPACE	12
ACTIVE RECREATION	14
PASSIVE RECREATION	20
RURAL CHARACTER	22
NATURAL CHARACTER	24
DRAFT PARK PLAN	30
Conceptual Plan	
Perspectives	
IMPLEMENTATION	38
Phasing	
Preliminary Cost Estimate	
Maintenance	

INTRODUCTION

Purpose

Ravensdale Park, a forested place of rich history and recreation, sits in the center of the Ravensdale/Georgetown community. Adjacent to Rock Creek and nature preserves, the park maintains a rural character as increasing numbers of residents move into the Ravensdale area. To accommodate the active recreational needs of the rural residents, the Southeast King County Ballfields Group asked Jones & Jones Architects and Landscape Architects to develop a Master Plan that would guide sensitive development of the park for the next 10 years.

Vision

After meeting with various representatives of the rural community, county staff, and athletic leagues, a clear vision was formed:

Provide a community center of active and passive recreation opportunities while preserving the rural and natural character of the Rock Creek Valley.

Goals

COMMUNITY OPEN SPACE

Create an outdoor community center that provides a place for people to gather and recreate.

ACTIVE RECREATION

Provide active recreation opportunities for kids and their families.

PASSIVE RECREATION

Provide trails, open space, and informal play opportunities for quiet recreation.

RURAL CHARACTER

Preserve the rural character of the park's historic and physical setting.

NATURAL CHARACTER

Preserve the natural character and the ecological functioning of the park and its surroundings.



Existing Park



Ravensdale Park is a 43-acre park with three baseball fields, an all-weather soccer field, picnic shelter, playground, and parking. The site is also home to the Gracie Hansen Community Center. The park does not include the Cemetery Reach Natural Area or the Ravensdale Retreat Natural Area, two County-owned nature preserves to the south protected from development.

Please refer to the *Ravensdale Park Master Plan Inventory and Analysis* report for a thorough discussion of the project's environmental and historical context.

PUBLIC PROCESS

Participation

King County Parks, owner of the Ravensdale Park property, has been working with local activists, environmentalists, and organizations interested in the park for the last several years. After the *Rock Creek Valley Vision Plan* identified Ravensdale Park as the best location for athletic fields in the rural area, the Southeast King County Ballfield Planning Group formed to discuss providing more fields at the park for rural residents. Gradually, additional people representing diverse interests in the valley were added to the group and the conversation.

As conversations progressed, a non-profit organization, Ravensdale Park Fund, was established to implement park ideas, hire a design consultant, and partner with King County to raise funds and in-kind donations for the first phase of the project.



Public Meetings

After the Design Committee had met a couple of times and reviewed some preliminary design ideas for the park, Jones & Jones led a public meeting at Gracie Hansen Community Center in September 2007. The purpose of the meeting was to pull ideas and opinions from a broader segment of the population to influence the final Master Plan and design. Over 400 people attended from the local area and Maple Valley to support ballfields, trails, picnicking, or no development at all. The diversity of opinions was gathered through a simple “voting” process and by written comments, later compiled and available on the master plan web site: www.jonesandjones.com/ravensdale.

Jones & Jones and the Design Committee used the public feedback to shape park programming and guide preliminary designs.

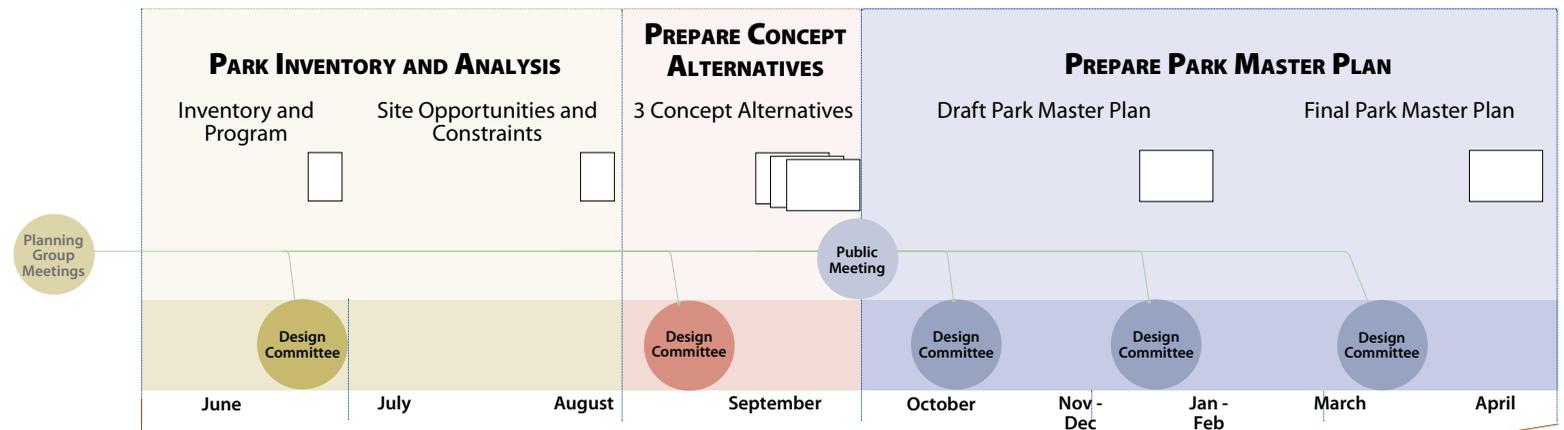


Overall Design Schedule

The Master Plan process is divided into three steps: **Inventory and Analysis**, **Concept Alternatives**, and the **Master Plan**. Jones & Jones completed the bulk of the inventory and analysis in the summer of 2007 but continued to work with the sports leagues and the rural community to develop a needs analysis for athletic fields in the rural area. Three concept alternatives were developed, then refined by the Design Committee. Two concepts were presented (**Community Core** and **Community Edge**) at the larger public meeting. Soon after, we developed an additional plan that accommodated a large community area. At the January Design Committee meeting, the alternatives were discussed and the group chose a preferred compromise plan. It is that compromise plan that is the basis of this Master Plan.

The Master Plan process is the first step within the larger design and permitting process. After the Master Plan, the first phase of the park will be further refined in Design Development and Permitting, followed by Construction Documents and installation.

RAVENSDALE PARK MASTER PLAN TIMEFRAME



RAVENSDALE PARK TIMEFRAME



PARK OPPORTUNITIES

Regional Context

Ravensdale Park is situated adjacent to Rock Creek, east of Maple Valley, along Kent-Kangley Road. Surrounded by forested hills, abandoned coal mines and the small communities of Ravensdale and Georgetown, the park serves as a center for this growing rural area. Its central location presents a wonderful opportunity for sensitive development of the park into open space and recreation facilities that bring rural residents together.

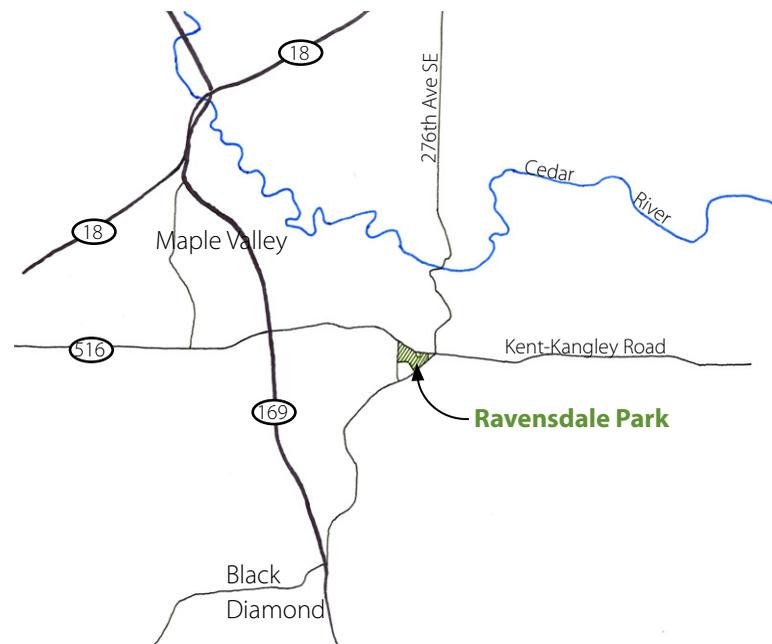


Figure 1: Location map

Historical Setting

The park has been the center of the community for over 100 years. The town of Ravensdale began as housing for coal miners with a peak population of 816 in the year 1910. Miners throughout the South Puget Sound area formed baseball teams to play competitively on their day off work. The Ravensdale town team played in an empty lot across Landsburg Road for awhile, before moving to the Ravensdale Park site. A new school was built in 1934 by the Works Progress Administration (WPA) on the park site. The school's gymnasium acted as the park's community center for many years after that, until it was torn down in the early 1960s.

This history of mining, baseball, and education provides designers with rich inspiration for elements of design, including park program, park layout, planting, and use of materials. For example, materials for fences, walkways, and site furniture could be pulled from the railroad boxcars (cor-ten steel) and mining structures (wood) of the early twentieth century.

As the physical center of the Ravensdale community, the place could also house a small interpretive or cultural center to consolidate the area's historical information and celebrate the mining and rural past of the town, while providing an outdoor meeting place for residents.

Despite the development of the small towns of Ravensdale, Georgetown, and Hobart, the Rock Creek Valley remains fiercely rural. Outside of the urban growth boundary, the rural residents take pride in their independence, their love of open space, and a unique identity as separate from the Seattle metropolitan area. This more recent history of defining the area as "not a city or suburb" also informs the historic character of the park and adds to the richness of the landscape.



Rock Creek Valley Conservation Plan Natural Environment

In 2001, residents of the Rock Creek Valley area, recognizing the development pressure the valley faces, proposed a planning vision for the Rock Creek valley. The plan creates priority areas for preservation of forest buffers between the City of Maple Valley and the Ravensdale area, for wildlife corridors, and for sensitive natural areas. Friends of Rock Creek, writers of the plan, also identified the best places for development to occur in order to preserve the sensitive areas. The plan recommends concentrating athletic fields for rural residents at Ravensdale Park to preserve open space elsewhere in the valley. "Active recreation facilities for public use are concentrated around this site, the King County Sports Park, and, if developed, the proposed Real Life Church site" (*Rock Creek Valley Conservation Plan*, pg. 38). The plan goes on to state that other development of active recreation sites in the valley "should be carefully weighed and evaluated on the basis of their 'cumulative effect' impacts on other Valley resources, especially wildlife and forest cover."

The *Rock Creek Valley Conservation Plan* was endorsed by the Metropolitan King County Council in 2001 and finalized in 2004.

The abundant forest and streams of the Rock Creek Valley provide visitors to the park with opportunities to connect with the natural landscape and learn ecological processes such as soil development, forest succession, and the hydrologic cycle. Bringing people in close contact with the natural environment must happen in a sensitive manner to preserve the health of the forest ecosystem.

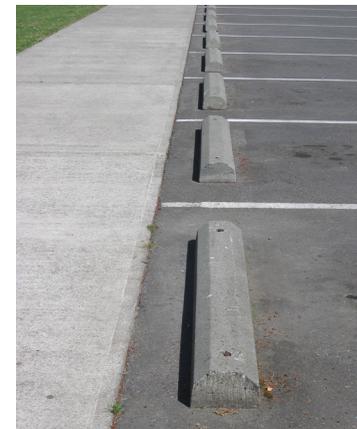
There are many opportunities to set the park within a forested setting. Given existing conditions and the nature preserves to the south, surrounding the park with a forested buffer of native trees and shrubs will allow for sensitive contact while active recreation occurs in the center of the park. Other opportunities to connect people to the forest ecosystem include restoration of Rock Creek near the Gracie Hansen Community Center, providing trail connections to the nature preserves, and providing interpretive signs for the trail system. See page 24 of the **Natural Character** goal for a discussion of design ideas related to the park's ecosystem.



Access & Circulation

There are significant opportunities to connect the park with the broader community, to encourage people to get out of their cars, and to make the site and its facilities as accessible as possible. The greatest opportunity is the location of the park, in between two of the main connector roads in the area, Kent-Kangley Road and Ravensdale Way. The park is therefore very visible to the rural community and should be a model for future low-impact recreation and community development. The neighborhood also would like to minimize traffic and noise, especially at peak hours of the day.

Based on an eventual park configuration of three remodeled baseball fields, two new soccer fields, and various other community facilities, project transportation consultant Ross Tilghman has completed a preliminary analysis of the traffic impacts to the site and the area. The following description serves as a summary of those preliminary findings; additional analysis and conclusions will be completed during the next phase of planning and design.



Parking Demand at Peak Times

Baseball and soccer schedules provided by the athletic organizations that will use the fields at Ravensdale Park indicate a seasonal peak time in the spring from March to June. During those months, baseball/softball will use three fields for single practice sessions on weekday evenings (6–8 pm), up to four games each on Saturdays (9 am–9 pm), and two games each on Sundays (11 am–5 pm). Soccer will use up to three fields on weekdays for two games each (5:30–9:30 pm) and on weekends for two games each (11 am–3 pm).

According to the organizers, most youth players are dropped off for weekday practices. As a result, parking demand is lowest for these fields on weekdays, totaling approximately 32 spaces, and higher on weekends when drop-offs are fewer, with a peak of 55 vehicles parking. Use of the Community Center and the picnic area is expected to continue at levels comparable to today's.

These estimated demands reflect youth sports as the primary users of the fields. Should adult use of fields occur, demand would increase since there would be more vehicles present throughout the practices and games. In that event, peak demand would increase by approximately 20 spaces. Tournaments and other special events would also likely increase parking demand, depending on the

Table 1: Parking Demand

Activity	March–June Peak Parking Demand (Spaces)	
	Weekdays (6–7 pm)	Saturdays (11 am–2 pm)
Baseball/Softball	44	77
Soccer	29	147
Community Center	34	10
Picnic Area/General Park Use	2	5
TOTAL	109	239

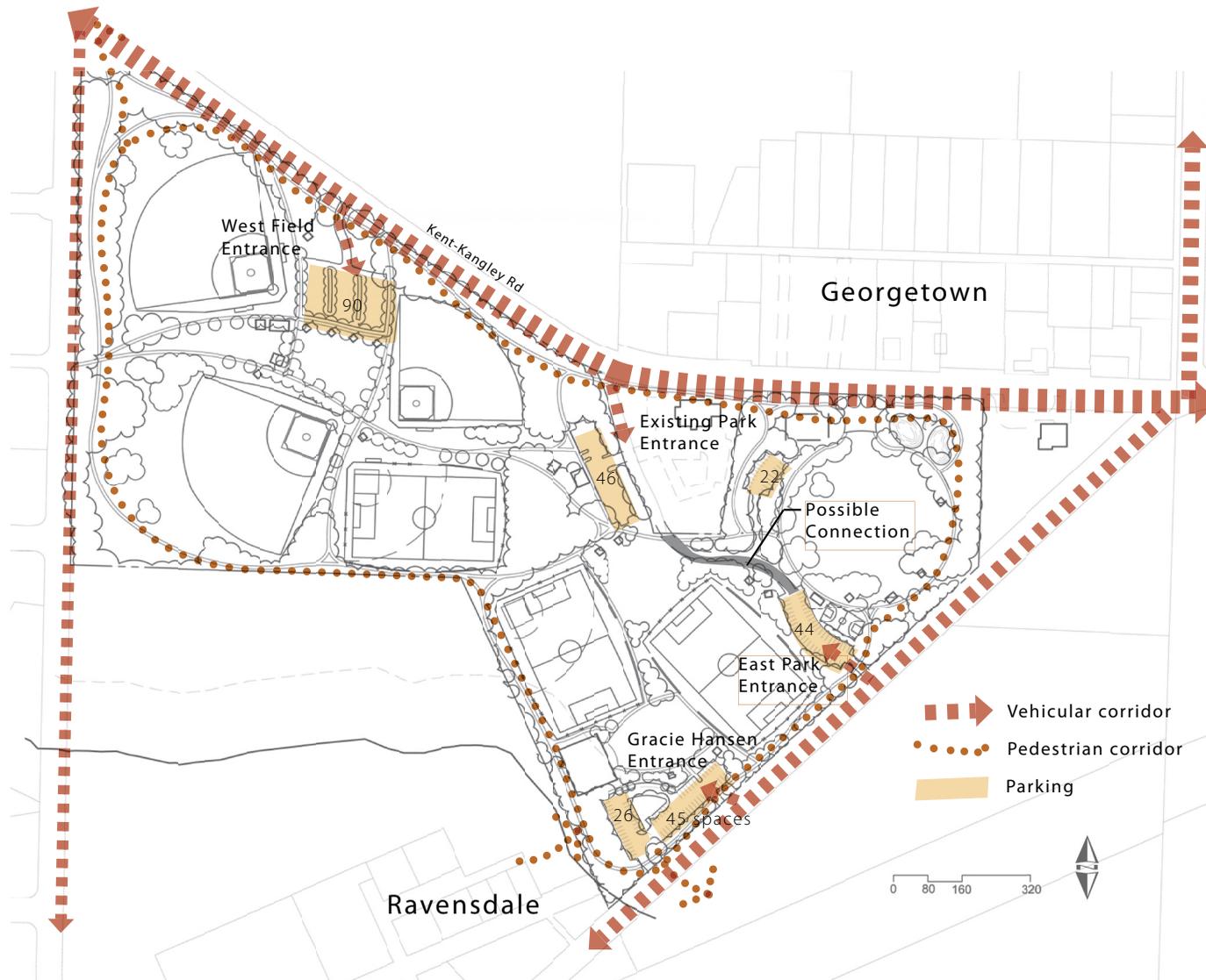


Figure 2: Circulation and parking diagram

Pedestrian & Bicycle Circulation

A network of trails will provide pedestrian and bicycle circulation throughout the park and will connect to existing walks and trails in the area. A perimeter trail encircling the entire park with access to all adjacent streets and new crosswalks will link all portions of the park. Internal trails will cross the park east to west and north to south, linking together fields, picnic areas, parking, and the Community Center. A new crosswalk on Kent-Kangley Road midway between the Post Office and the fire station will create safer and more visible crossing for area residents. Similarly, a new crosswalk on Ravensdale Way will connect an extended Gracie Trail to the park near the Community Center.

This new trail system effectively separates pedestrians and cyclists from motorized traffic at all but the parking lot driveways. By distributing parking in multiple small lots and narrowing or eliminating the through route on 272nd Avenue Southeast, traffic volumes at those crossing points will be minimized. Where pedestrians must cross streets, the new crosswalks create a more obvious crossing for drivers to see pedestrians and slow down.



Vehicular Traffic Volumes at Peak Times

On weekdays, traffic would peak in the late afternoon as people arrive for practice and games. On Saturdays, the peak time is expected to occur mid-afternoon as soccer games end and baseball games continue. At the peak time, the scenario where more baseball fields are used generates slightly more total traffic than the scenario where baseball and soccer use the same number of fields.

Arriving and departing vehicles would be distributed among the different parking lot driveways. For example, Community Center traffic would use the parking lot located nearest to the Community Center. Baseball and soccer traffic would typically use the parking lot closest to the field for that day's use.

Table 2: Traffic Volumes

Activity	March–June Peak Traffic Volume					
	Weekdays (5–6 pm)			Saturdays (10–11 am)		
	In	Out	Total	In	Out	Total
Baseball/Softball	104	60	164	50	77	127
Soccer	40	16	56	0	100	100
Community Center	31	0	31	0	34	34
Picnic Area/General Park Use	2	2	4	4	4	8
TOTAL	177	78	255	54	215	269

Vehicular Circulation

The distribution of traffic among the four parking lot driveways spreads traffic around the edges of the park, avoiding a high concentration at any one location. This pattern also minimizes vehicles crossing pedestrian paths between parking lots and the park's fields, picnic areas, and other spaces.

The expected volumes at the driveways would be less than occurs now on 272nd Avenue Southeast and are therefore expected to operate acceptably, with minimal delay. It is worth noting that during the weekday's peak hour, most park-generated traffic will be inbound, turning from Kent-Kangley Road and facing little conflict with other vehicles. Departing traffic, typically leaving in off-peak periods, would face little delay.

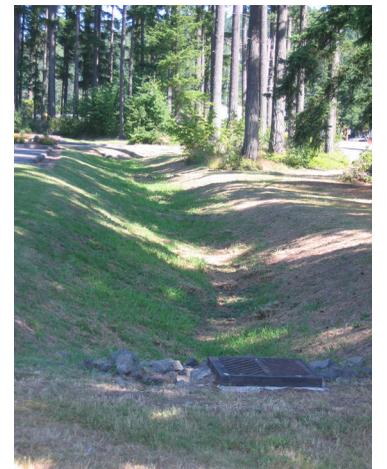
The Design Committee is considering elimination or relocation of 272nd Avenue Southeast as a route through the park. The route is currently used by some area residents and commercial trucks as a convenient alternative to the intersection of Ravensdale Way/Kent-Kangley Road, as well as for access to the Post Office. The local residents strongly favor keeping the avenue open to traffic, but closing the route to commercial truck traffic. A through route creates potential conflicts between vehicles and park users as visitors cross the road to reach the proposed picnic tables, basketball court, skate park, and open area in the park's northeast section. Narrowing or eliminating the through route would prevent the vehicle/pedestrian conflicts and eliminate commercial truck traffic in the park. This change would be offset by King County's proposed reconstruction of the Ravensdale Way/Kent-Kangley Road to create a roundabout intersection that will greatly reduce delay, increase intersection capacity, and improve safety. Reconstruction is planned for 2009.



Aesthetics

The park's aesthetics were evaluated from within the park, visitors enjoying the surrounding scenery, and from outside the park itself, drivers on adjacent roads looking into the park. The surrounding scenery of forested hills can be seen from several open places in the existing park. There is an opportunity to accentuate those views through design and placement of park facilities and circulation. For the park facilities within the park, the appearance of the park from the road and community should blend into the rural setting and establish a model of consistency other development can follow.

This visibility of the park itself brings us full circle with the history and the rural character of the area. There is an opportunity to use materials unique to the rural area, in contrast to the more urban materials of chainlink fences and concrete walks. Material selection and design also affects quality and durability, ultimately influencing the public's perception of the park and its upkeep.



Green Infrastructure

Green infrastructure is the network of accessible, open spaces in each community that provide elbow room for people to recreate, relax, and be restored. Parks, trail corridors, greenways, and natural areas form this network, giving valuable outdoor space to rural residents. Environmental psychologists have researched people's responses to being in a natural space, and they have found it restorative. When walking through a park, people's heart rates slow and their stress levels decrease. It is critical then for all rural residents of the County who may not have their own private 40-acre ranch to have access to natural places to breathe, play, and take a nap. Ravensdale Park provides an accessible natural area and a gateway to a larger natural area and trail network.

The network of green infrastructure also encompasses the ecological functions of these open spaces: water conveyance, forest habitat, energy flow. Park development must not disrupt the functioning systems of water, soil, sun, and plants. Traditional park infrastructure, such as power utilities, concrete pipes, and fertilized lawn, does not blend with the rural landscape, clashing with the aesthetics of the landscape and detracting from the site's ecological health. The following guidelines for infrastructure development should apply:

1. Install locally procured materials, the less refined or manufactured the better.
2. Make ecological processes (i.e., water conveyance) as visible as possible.
3. Follow the County and State's ecological requirements for stormwater treatment, wastewater treatment, and park maintenance.

COMMUNITY OPEN SPACE

Goal: Provide Community Open Space

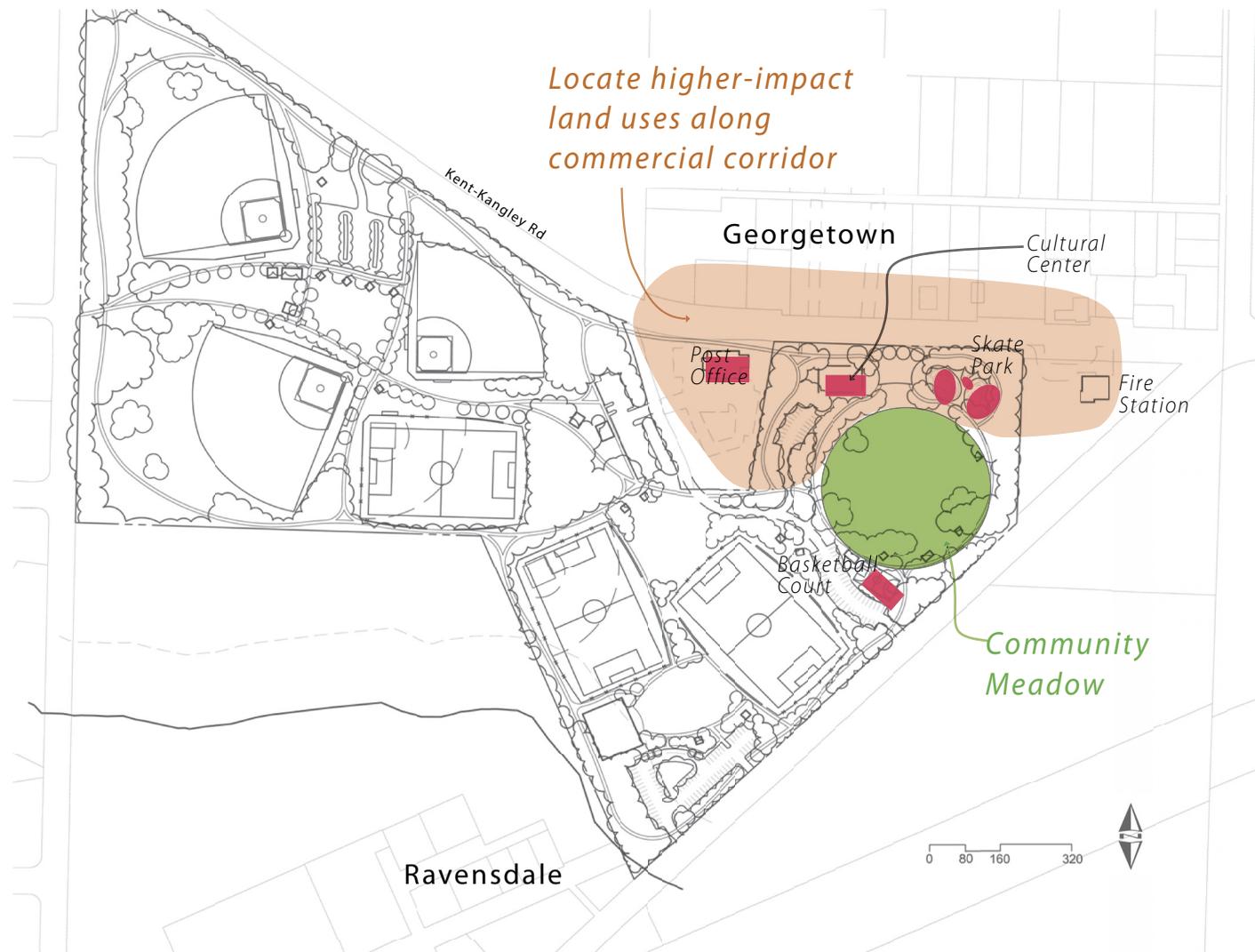
Currently, the park provides a few facilities for local residents to gather outdoors: a picnic shelter, restrooms, horseshoes, and a play structure. There is little community open space that is not devoted to ball fields. Yet, the park as a whole is an ideal location for a community gathering space. Located between the historic mining community of Ravensdale and the small commercial center of Ravensdale/Georgetown, a park-like open space could bridge the two areas of the small town and enhance pedestrian connections, while providing a new place to bring people together.

When asked what rural residents would like to see in a park, many chose community activities and a “gathering of neighbors.” They wanted a place for people to informally recreate (see the **Passive Recreation** goal, p. 20), playing games such as Frisbee or just running around. Many of the structures mentioned were intended to provide places for gathering, especially picnic tables and picnic shelters. Finally, when the Citizens for Rural Ravensdale created an alternative plan, they indicated a strong desire of the community to celebrate the area’s history with a small interpretive center.

In a park of this size, all of the requested community facilities can be accommodated. There are two main ways to ensure enough open space is designed for the community. The first is to sprinkle open space throughout the park, so all park users have easy access to smaller pockets of informal open space. In previous designs, this method gave soccer or baseball families immediate access to adjacent open space that could be used by the whole community. Casual users of the park could watch ongoing games. Many local residents resisted this scheme, preferring a field layout that separated players/fans on and near the athletic fields from those using the park as a quiet refuge. They requested an area on the east side of the park specifically devoted to passive recreation and informal play, with a buffer separating the area from the soccer fields.

Several of the community facilities, such as the cultural center, the skate park, and the basketball courts, can typically be found in more-developed parks. The paved and structural nature of these elements should be located along Kent-Kangley Road, across the street from the Ravensdale/Georgetown commercial development. By placing these elements here, they can be adjacent to the livelier street life of the community while buffering the interior of the park, particularly the community meadow, from noise and traffic.





The existing Gracie Hansen Community Center currently serves the needs of many rural residents by providing space for indoor recreation, community use, and concessions. The concrete building, shipped to Ravensdale Park after a short life at the Seattle World's Fair (1962), does not blend into the rural backdrop and was underutilized until a community-based youth baseball group added equipment to the gym for baseball practice. The community needs an indoor space to gather. If improvements could be made to the façade and the interior it would be more heavily used by a diversity of local residents. A wood or stone façade could be added, remodeled restrooms could be entered from the exterior, and the indoor office and meeting room could be updated, while preserving the large space for recreation and events.

A communal open space outside of Gracie Hansen will enhance the usefulness of the facility to hold indoor/outdoor events. Concessions can be set up both inside and outside during an event, as a station in a long-distance bike race, or for a large family reunion.



Figure 3: Passive Recreation diagram

ACTIVE RECREATION

Goal: Provide Active Recreation

For much of the community, the number of fields that the park can accommodate was the defining issue in the debate over the future of the park. Supporters of baseball and soccer wanted the maximum number of fields the park could hold. Maple Valley Soccer League and the Cedar River Baseball Group estimated the number of soccer and baseball fields needed in rural King County by examining their member lists for rural members, scheduling the potential number of teams, and reviewing existing fields and their condition. Their study found that even if the entire park were devoted to athletic fields it would not meet all of the needs of the rural residents. Environmental groups such as Friends of Rock Creek Valley wanted to preserve County land elsewhere in the rural area for wildlife and water quality and so designated Ravensdale Park to receive development of athletic fields in the Rock Creek Vision Plan.

According to the soccer and baseball leagues, the most pressing need for fields is for those children aged 10 to 14 who can no longer play on the smaller fields prevalent in school yards. Larger fields also provide more flexibility for adjusting bases for all age ranges (in the case of baseball). A single large soccer field can accommodate two games of soccer by the youngest kids playing side by side.

Many in the local neighborhood had concerns about the increased number of athletic fields and the potential increases in traffic, field lighting, and noise. New lighting technologies and appropriate traffic planning will minimize such impacts. There were also concerns about the regional draw of the park due to the lack of urban facilities within the City of Maple Valley. Maple Valley is currently designing and permitting a new sportfield complex that will be constructed around the same time as ballfield improvements at Ravensdale Park..





Figure 4: Active Recreation diagram

Drawing upon the initial goals, designers concentrated rural area ballfields at Ravensdale Park while maintaining the rural and natural character, devoting park space to an outdoor community center and providing for passive recreation also. The *Rock Creek Valley Conservation Plan* shows a rough sketch with 13 fields shoehorned into the site. When buffers were established between the neighborhoods and the fields, expanded the existing community area, and provided parking, we arrived at eight total fields the park could accommodate in the long-term. Four baseball fields were located in the western section of the park, and four soccer fields were located in the east section of the park with an outdoor community open space running through the middle. This plan assumed that many of the non-participants in athletics would still be interested in the ball games, either as fans or as curious bystanders. Fields were designed to accommodate a gradient of people based on participation from players to fans to casual onlookers (see Fig. 5 and 6).

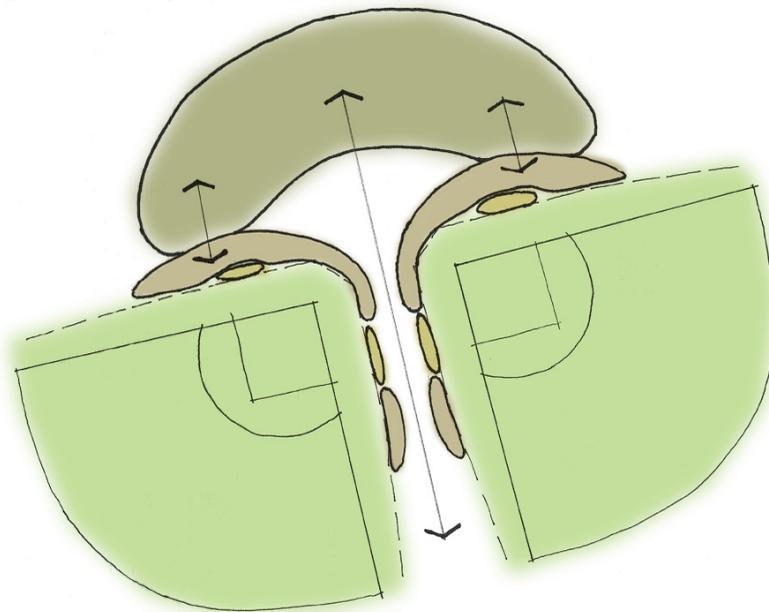


Figure 5: Participation gradient at a baseball field.

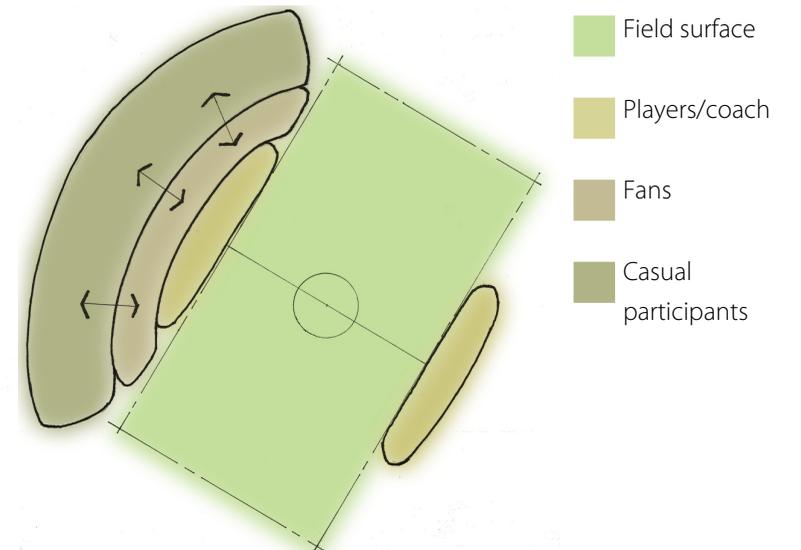


Figure 6: Participation gradient at a soccer field.



As discussed in the **Community Open Space** goal, many local residents did not like this scheme. They wanted a completely separate area devoted to quiet reflection and informal play. They also requested accommodations for other sports, such as basketball and skateboarding. By making the eastern section of the park an area devoted to the park's immediate neighbors, the available space has been reduced for the large athletic fields. There are now three baseball fields and three soccer fields proposed for the site. Two of the soccer fields can also be overlaid with a small baseball field for the smallest kids to play on when soccer has not scheduled the fields.

The fields have been placed within the center of the park to maximize other recreation opportunities and preserve the natural and rural character of the area. In order to save funds, the existing north baseball field and the all-weather soccer field remain in their current locations, although they will be renovated. Both the west field area and the south fields have associated open space that serves many uses: after-game parties of Little League teams, children's playgrounds for younger brothers and sisters who cannot sit still and watch a game, and informal warm-up areas for stretching.



In addition to the number and configuration of fields, there are a number of other issues regarding fields that were discussed. The size of fields has already been mentioned, but field lighting and surfacing are important considerations for Ravensdale Park. Residents have expressed concern about the lighting, in particular light spilling into neighboring areas late at night. The existing all-weather soccer field creates quite a glow during nights when the lights are on. Two design components can mitigate light spillage: use of newer, "cut-off" lamp fixtures, and planting of significant buffers around the perimeter of the park.



Figure 7: Field lighting impacts at Ravensdale Park if full cut-off lights are used.

FIELD LIGHTING

Lighting Design Concerns

In planning the addition of athletic fields to Ravensdale Park, the decision to use field lighting will greatly increase the park's scheduling capacity. One major concern regarding field lighting, especially in a more rural setting, is light pollution. However, there are lighting systems which can work to reduce negative impacts to residents and neighbors. Some lighting system considerations:

- Programming:** There is a certain amount of control relevant to programmatic decisions regarding lighting, such as deciding the number of fields which are lit, as well as when they are lit or when there is a curfew.
- Site Considerations:** Analysis may include impacts on wildlife, impacts on neighbors, and how vegetation may be used to screen glare and spill light.
- Aesthetics:** Pole height, number of poles, and fixture density all affect general aesthetics and will vary depending on factors such as illumination level of field and the type of light used.

"Full Cut-off" Lighting System

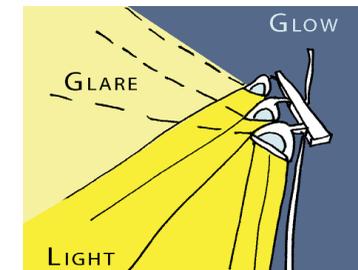
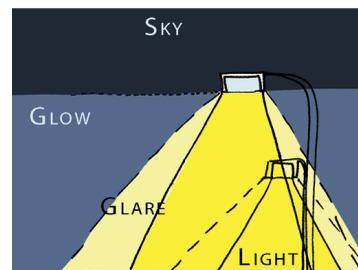
This type of lighting system uses downward-aiming fixtures arranged at various heights on the field side of the pole. The fixture is contained in a box-like structure so that no direct light is emitted above the plane of the fixture opening. Once installed, fixtures are difficult to adjust. This system may use both metal halide and high-pressure sodium lamps of 1000 watts each.

- Illumination Off-site:** Spill Light—some spill light behind the pole.
Glare—no glare above the fixture.
Sky Glow—minimal sky glow (will vary by field surface reflected light).
- Uniformity:** Uniformity on larger surfaces is more difficult to achieve.
- Life Cycle Costs:** Typically higher initial capital outlay.
- Aesthetics:** Visually unobtrusive at the mounting point (fewer fixtures, mounted close in). However, poles must be close to the playing surface.

Shielded Aimable Lighting System

This lighting system uses a dome-shaped metal reflector around a lamp that results in a controlled beam spread. The fixture also has separate visors and shutters that can adjust the beam. Individual fixtures are arranged on cross-arms extending outward from the pole and can be targeted at specific areas. This system almost exclusively uses metal halide lamps with either 1000- or 1500-watt power output.

- Illumination Off-site:** Spill Light—no spill light behind the pole.
Glare—higher glare below, and moderate glare above, the plane of the fixture.
- Uniformity:** High degree of uniformity regardless of field size or shape.
- Life Cycle Costs:** Typically lower initial capital outlay.
- Aesthetics:** Visually dense at mounting point (number of fixtures on cross-arms). Typically fewer poles are required.



PARK SURFACES

Natural Grass

Combining natural grasses with specific engineered soil structure and drainage, grass fields have been the standard recreational surface in the past. Their primary benefits are providing photosynthesis, keeping playing surfaces cool, flexibility in terms of use, and the natural feel of the landscape. The main disadvantage is they do not hold up well to constant use, requiring a few months of rest to allow the grass to re-establish. Grass also requires more frequent irrigation during dry months.

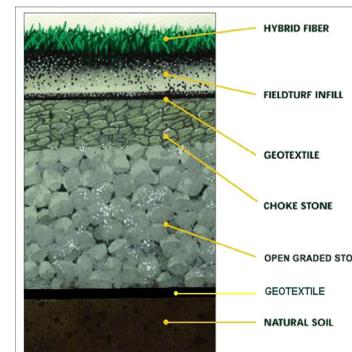
- Recreation Use:** Athletic—Low to Medium, with periods of rest.
Other—High, including picnics, informal play, events.
- Maintenance:** Mowing 1/week during growing season, 2/week during spring; fertilizer 2/year; aeration and/or top dressing every two years.
- Life Cycle Costs:** Installation \$600,000/lifetime.
- Maintenance:** \$450,000/10 years.
- Aesthetics:** Park-like.



Infill Synthetic Turf

Synthetic turf has advanced significantly from the early days of AstroTurf. Newer technologies of turf fill polyurethane carpet fibers with crushed rubber (Nexturf, Astroplay) or a combination of rubber and sand (FieldTurf). Their primary benefits are providing year-round heavy recreational use and lowering maintenance time and costs. The disadvantages include the high installation cost, and design and aesthetic issues. Surface temperatures of synthetic turf can reach 165°F.

- Recreation Use:** Athletic—High, can be lighted.
Other—Low.
- Maintenance:** Broom 1/week during use; groom/loosen granules 2/year; apply surfactant 2/year to maintain water penetration.
- Life Cycle Costs:** Installation \$1,000,000/10 years.
- Maintenance:** \$100,000/10 years.
- Aesthetics:** Functional.



Trees and Shrubs

Rural parks in western Washington are located within a context of the forest and farm landscape. To ensure this park stays rural in function and appearance, trees and shrubs will provide a visual buffer along the roadway and break up areas of large open space throughout the park. In addition to their aesthetic benefits, trees and shrubs create habitat, provide shade, and provide photosynthesis. The disadvantages of planting trees and shrubs are they provide limited recreational use and they require maintenance during establishment.

- Recreation Use:** Primarily trail use, aesthetics.
- Maintenance:** Weeding and replacement during first two years of establishment 2/year; additional applications of mulch after weeding
- Life Cycle Costs:** Installation \$40,000/acre.
- Maintenance:** \$24,000/year for 2 years.
- Aesthetics:** Natural buffer.



PASSIVE RECREATION

Goal: Provide Passive Recreation

Equally important to the rural residents of the Rock Creek Valley, the somewhat mis-named “passive” recreation provides visitors with an opportunity for less-formal play, for wandering and relaxing with others. This category includes all those activities that do not require a referee, such as hiking, horseback riding, biking, Frisbee golf, and children’s play. Facilities for passive recreation are simple and can be divided into two groups: trail networks and open space. There is a need for a trail loop at Ravensdale Park that can accommodate joggers and lunch-time walkers. But the majority of trail users require a much bigger network of trails than can be provided within the bounds of the park. What is needed at Ravensdale are connections to other trail networks, especially from the northwest corner of the park to the southern boundary where the Gracie Trail begins. A loop trail around the park’s perimeter will form a link in the larger valley trail network, while keeping the horses and bicyclists separate from other recreation activities in the center of the park.



Open space users at Ravensdale Park will be able to take advantage of the two large open space areas in the center of each athletic field cluster, the existing forested play area in the center of the park, and the large community meadow to the east of the park. Over half of the park will be dedicated to passive recreation and re-forested natural areas. Residents and sports representatives have both mentioned the importance of open space and family park facilities adjacent to the athletic fields, so that the whole family, including small children, can attend games without having to watch from the sidelines.

The existing forested play area will continue to provide space for picnics, horseshoes, and a kids’ play structure, as well as a restroom. This forested area provides a different feel and experience from the more open spaces of the east and west portions of the park. The Douglas fir trees create a peaceful atmosphere and cool micro-climate ideally suited for relaxing on a hot summer day. The existing parking lot could continue to host a way-station for long-distance bicycle races and tours. As open spaces are installed adjacent to the athletic fields much of the soccer team pizza picnics and the after-game tailgate parties will occur in those other areas, leaving the central fir grove as a quieter space during all but the busiest summer Saturdays.

Community members can congregate in the open meadow filled with native grasses and wildflowers. Portions of the meadow will be mown or planted with more traditional grasses to allow for Frisbee games and picnics. Picnic shelters will be constructed between the parking lot and the meadow in the shade of deciduous trees. A smaller loop trail will connect the local community facilities and allow for strolling away from the bustle of the street and the athletic fields.



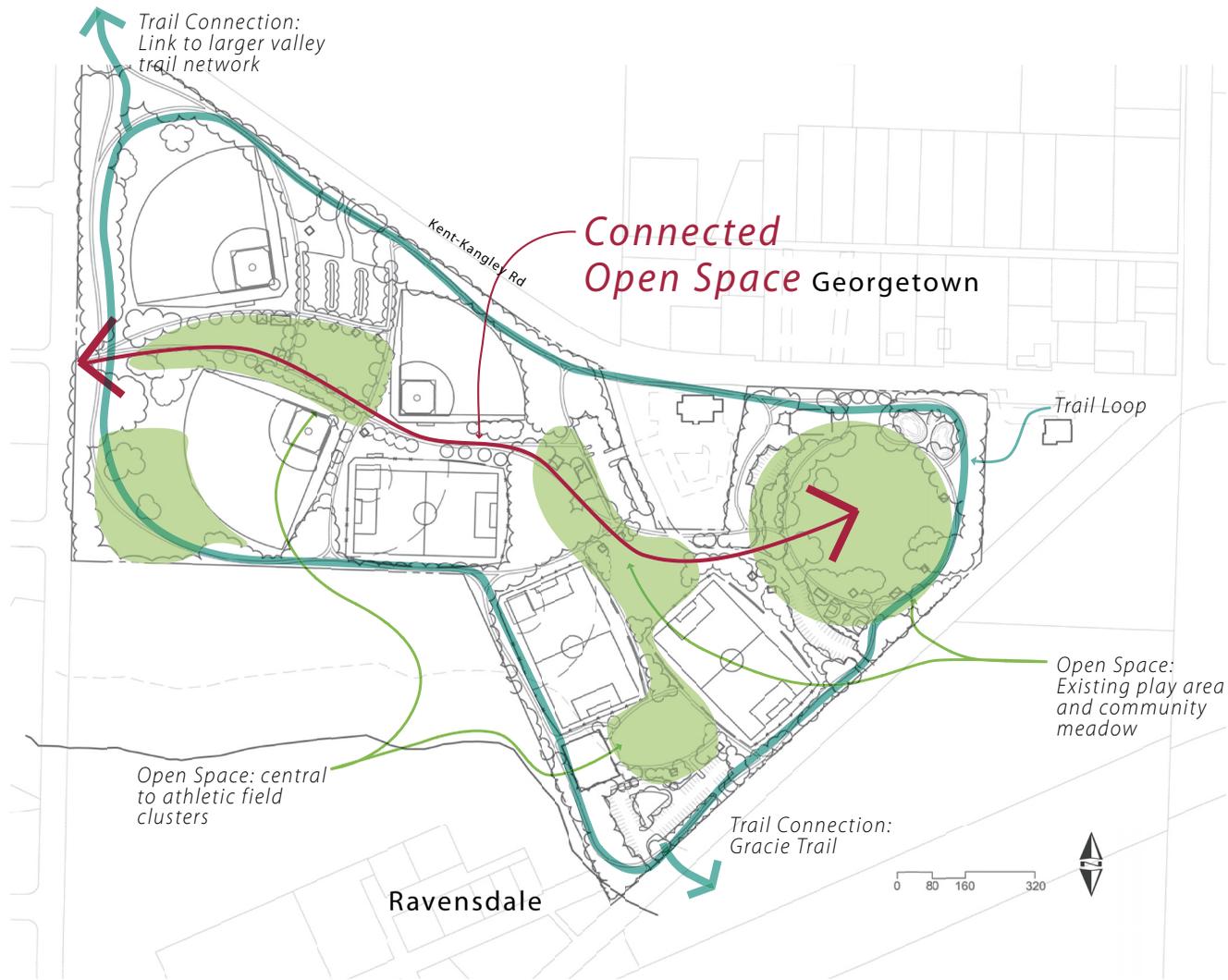


Figure 8: Passive Recreation diagram



RURAL CHARACTER

Goal: Preserve Rural Character

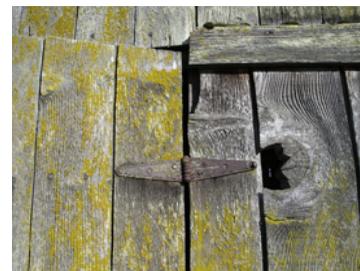
The community and the County see the maintenance of the rural character of Ravensdale Park as the highest priority. To apply this rural character to the design, designers should focus on landscape pattern, development scale, and commonly used materials. The rural landscape pattern is characterized by a mosaic of forest and grassy clearings, dotted with low density development and a recognizable rural aesthetic. In the Rock Creek Valley there are numerous large public lands and timber holdings of undeveloped forest. Where the forest does not meet the roads' edge, it is almost always in the background. Preservation of the natural character of the area (see next section) will be critical to preserving the rural character as well. Natural and human created clearings dot the forest, along with low density residences, barns, or the occasional cluster of commercial buildings. Development follows the roads, even if driveways and mailboxes are sometimes the only indication of their existence.

Clearings occur as farm or pasture, fallow fields, natural meadows, or industrial sites. Also evident are the linear clearings maintained for train tracks and utility lines. Fields vary in scale and commonly use low wooden fences or rows of trees to define their edges. Open grassy areas are not highly manicured and typically consist of tall grasses and wildflowers. It is rare to see a highly manicured lawn or landscape. It is also rare to see large expanses of pavement. Even in industrial areas or construction yards the surface is left as bare earth.

The scale of development is small. Residences are sparse, and commercial areas occur as small clusters of buildings set along a main road. Buildings are typically one to two stories tall, and while materials vary they are most commonly wood. In Ravensdale, historic miners' residences along with a few other historic structures still exist and embody the rural character as small-scale, wooden structures, all with porches and none set far back from the road. Throughout the more agricultural landscape and further from the Ravensdale/Georgetown

commercial cluster, the dominant structures are wooden barns set back from the road. There is also the common sight of train box cars made of cor-ten steel which, while not a permanent fixture in the landscape, nonetheless characterizes rural industry and historically had a more dominating visual presence.

In order to apply a rural landscape pattern to Ravensdale Park we recommend enhancing and applying the observed rural landscape mosaic. Currently in the park some mature trees are preserved along the road edge, and the natural areas of Rock Creek and Ravensdale Retreat Preserves create a dense forest background for the open areas of the park. The preserves and road edge can be enhanced to recreate the sense that the forest is the dominant landscape here; then sports fields and community open space can be seen as the equivalent of forest clearings in the mosaic. By strengthening the forest edge around these clearings or designing rural edge treatments to these clearings, the park will succeed in embodying a rural landscape character.



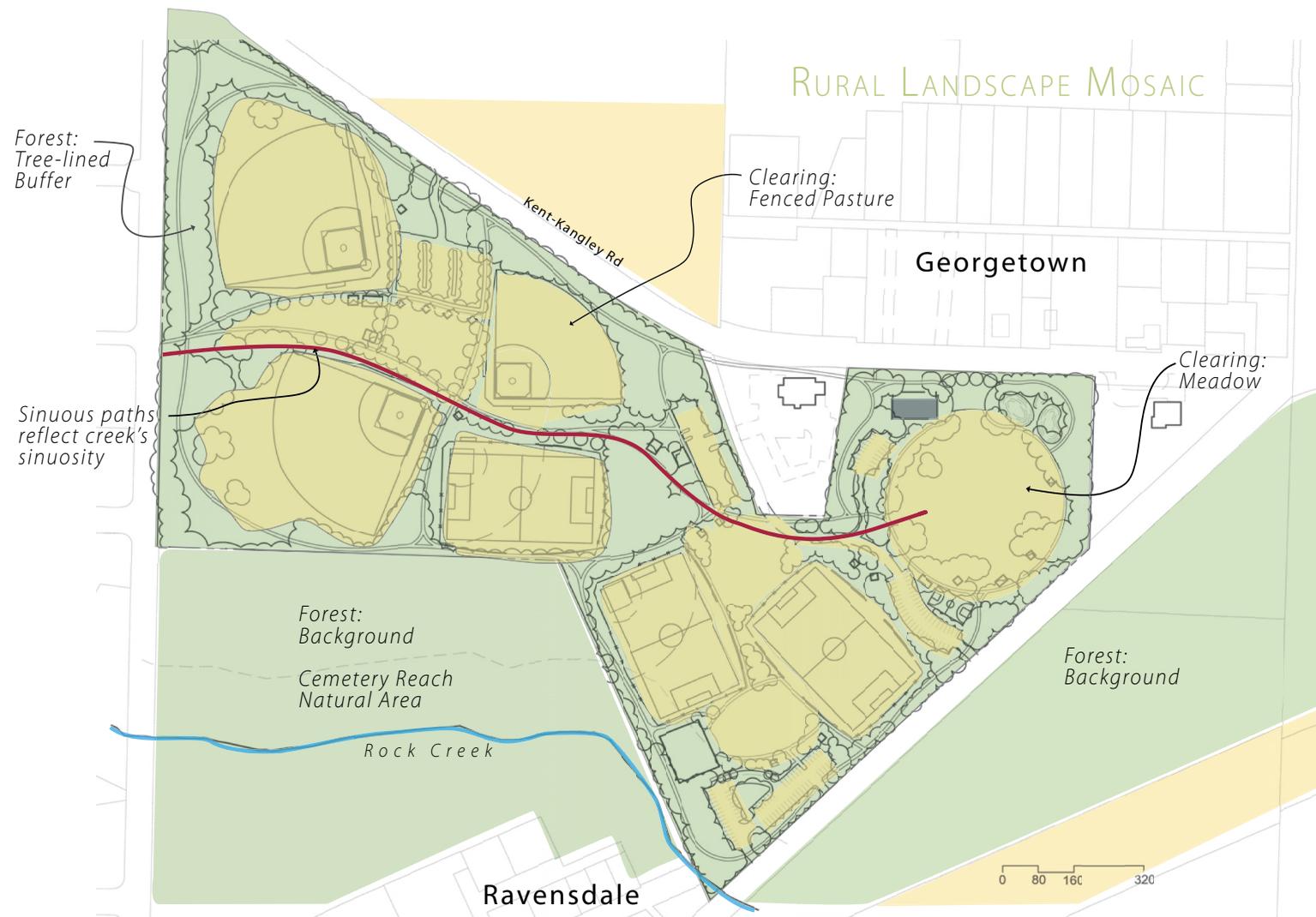


Figure 9: Rural character diagram

The development scale and materials used are also important in maintaining rural character. For the eastern wing of Ravensdale Park that is adjacent to the Ravensdale/Georgetown commercial center, park designers should implement a small-scale, low-height building structure for any future interpretive center. This building and any other structure should exemplify the local aesthetic by using the same wood material, fence types, and short set-back distances. Any large parking areas or paved surfaces should be broken up by trees and planted areas with native plants. Also gravel, grass, or grass-crete overflow parking areas should be considered in order to reduce the amount of paved surface necessary in the park. Picnic shelters and benches should also be small-scale and use locally relevant materials such as wood planks, large timber beams, or even the rusty red of cor-ten steel that is reminiscent of passing train cars.



NATURAL CHARACTER

Goal: Restore Natural Character

For all rural residents, whether people, animals, fish, or trees, it is important that any development that occurs at the park not disrupt the landscape's ecological health. Wherever possible, improvements to the site's biodiversity, water quality, soil structure, and habitat will be made. This will enhance the functioning of Rock Creek, replenish groundwater cleanly, and bring people into closer contact with the forest ecosystem. Many of the best management practices installed in the park to promote ecological health are now required through King County's regulatory process. These regulations are particularly stringent in regards to water quality.



The natural character of the park shapes aesthetics as well. One of the reasons the rural area remains rural is that significant areas have been protected from development and remain in a more natural state. In the Rock Creek valley, landowners such as King County, the City of Kent, and timber companies all own large tracts of undeveloped land. The continued natural state of these lands will contribute to the natural character of the park as much as design decisions within the park itself. For instance, if surrounding hillsides were clear-cut, the park would no longer have a natural character. Views from the park affect the visitor's experience. We have indicated areas within the park that have the best natural views of forests and hills on the plan. These views suggest that preserving the forested slopes of Ravensdale Ridge, Sugarloaf Mountain, and McDonald Mountain is critical to the continued natural character of the park's surroundings.

Portions of the existing park are currently forested. The rest of the park not devoted to ballfields or parking is open meadows of native grasses, shrubs, and invasive species such as Scotch broom. In order to enhance the site's existing biodiversity, buffers and left-over spaces will be planted with native trees and shrubs. Invasive plants will be removed to provide better habitat for wildlife. The perimeter buffers will serve as links for wildlife to move within a protective canopy as well as a soft barrier for people intent on entering the nature preserves to the south.

A winter herd of elk often relaxes in the west section of the park. The design will continue to provide the elk a place to browse in the southwest corner. Rock Creek has a mature riparian canopy preserved throughout the length of the Cemetery Reach Natural Area. When it crosses Ravensdale Way, however, the channel of the creek straightens, and Himalayan blackberry has replaced the canopy of alder and cedar. To allow the riparian corridor to re-colonize this stretch of the creek, the Gracie Hansen Community Center parking will be shifted east of the riparian buffer. A more complete restoration of Rock Creek would include an expanded culvert below Ravensdale Way.



Figure 10: Natural character diagram

STORMWATER

Stormwater runoff, the water flowing off a site during and after a rain event, can pick up car oil from a parking lot or trash from a soccer field and carry it downstream to a creek. If rain falls on an impervious surface, the runoff could flow very quickly downstream, creating a surge of water and leading to erosion and stream degradation. The County and State have passed laws that require development to treat and store stormwater in a way that mimics pre-development conditions. At Ravensdale Park, stormwater Best Management Practices (BMPs) will be installed to filter and detain the stormwater runoff. The most applicable BMPs can be divided into two categories: those that treat water quality and those that attenuate water quantity.

Water Quality

Biofiltration BMPs, such as the planting of grassy swales or roadside filter strips, use natural plant materials to filter pollutants from runoff. They remove pollutants by means of sedimentation, filtration, soil sorption, and plant uptake. In order to be effective, these BMPs should be placed close to the source of water before the stormwater channels in a high flow.



Filtration systems use soil, leaves, or a manufactured mix to filter pollutants from stormwater runoff. These BMPs range from large sand filters that trap pollutants to small catch basin inserts that must be replaced periodically.

Water Quantity

Storage and detention BMPs detain and store water temporarily, slowly releasing water downstream during a storm event. They can come in many different sizes, from a large wet pond to a smaller wet vault. Larger drainage areas require larger facilities and more expensive solutions. Some wet ponds can also be used for water quality treatment if the water is stored long enough to allow sediment suspended in the water to drop out. If that is the case, periodic cleaning and dredging will be required.

Water Quality and Quantity

Infiltration BMPs use some type of impoundment to delay water runoff so it can infiltrate the underlying soil. The soil removes pollutants and retains water naturally. There are infiltration trenches, basins, and swales.

Constructed wetlands also use natural materials to filter pollutants, but they also can detain runoff and provide some dampening of hydrologic surges. They require ecological expertise and a sizeable area.

Choosing the best stormwater BMPs is a balance between functionality, cost, aesthetics, and maintenance considerations. In general, it is cheaper and better to locate smaller BMPs as close to the source of stormwater runoff as possible. For example, grass filter strips immediately adjacent to a parking lot can treat runoff before it concentrates and must be contained in a large detention pond. At Ravensdale Park, a primary functional consideration will be the proximity of the groundwater to the soil surface, as infiltration BMPs require stormwater to percolate through a significant amount of soil before reaching the groundwater.



NATIVE PLANTS

Using hardy, native plants in the buffer and fir grove areas of Ravensdale Park will minimize plant maintenance (after the first two years) and will ensure the park's landscape is compatible with the surrounding rural, forested area. The following plants would be good candidates for planting in the forested buffer and open meadows of the park:

Trees

Douglas fir, Western hemlock (shade), Paper birch, Big-leaf maple, Pacific crabapple

Shrubs

Salal, Huckleberry, Ocean spray, Snowberry, Beaked hazelnut, Vine maple

Open Meadow Grasses

Red fescue, Blue wildrye, Alaska brome

Wildflowers

Oregon iris, Hooker's onion, Foamflower, Western buttercup, Aster



WASTEWATER TREATMENT

The treatment of wastewater is a critical issue in the rural area, especially in those areas with high groundwater, such as at Ravensdale Park. Piped sewer systems with central treatment facilities are not an option in unincorporated King County. The following treatment options provide a range of alternatives:

A. Non-Plumbed Facilities

1. Portable Toilet Units (e.g., Port-a-Let):

- Sewage is collected in above-ground reservoir contained within unit; requires frequent pumping depending upon usage.
- No lavatories or flush toilets are provided.
- Plastic unit enclosure provides minimum privacy; overall ambiance is poor.
- Very low installation cost compared to other options.

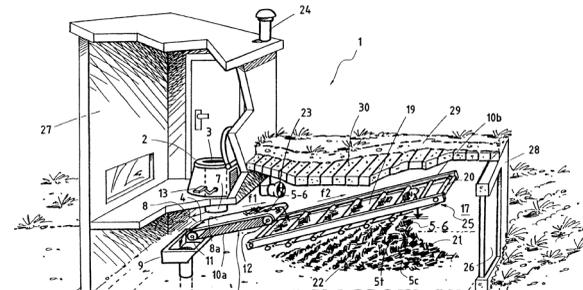


2. Vault Toilet:

- Sewage is collected in in-ground tank or vault containing chemical solution; requires periodic pumping depending upon usage.
- Typically, lavatories are not provided unless separate grey-water system is installed.
- A building enclosure is usually designed to contain toilet facilities; building provides better ambiance than portable toilet unit.
- Installation costs are relatively low due to absence of water supply and wastewater disposal systems.

3. Composting Toilet (e.g., Clivus Multrum):

- Similar to vault toilet, sewage is collected in tank or vault; however, unlike vault toilet, waste is broken down by biological activity into compost that is periodically removed; system requires monitoring and occasional introduction of additives such as sawdust to aid decomposition.



- System does not function with excessive water, so toilets are non-flush and lavatories are not provided unless separate grey-water system is installed.
- A building enclosure is usually designed to contain toilet facilities; building provides better ambiance than portable toilet.
- Installation costs are slightly higher than vault toilet due to cost of composting tanks, but still cheaper than plumbed restrooms.

B. Plumbed Restroom Facilities (Lavatories and Flush Toilets)

1. Conventional In-Ground Septic Tank and Drainfield System:

- A buried settling tank collects solids while wastewater is dispersed through drain tiles (pipes) buried in granular backfill; tank requires occasional pumping and drainfield needs replacing every 15 years or so; suitable sub-soil conditions are required for drainfield.
- Waste system is designed to accommodate lavatories and flush toilets; water source and internal plumbing are necessary to supply water to fixtures.



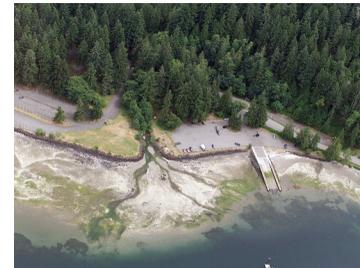
- Building enclosure combined with lavatories and flush toilets provide a much better ambiance for users than non-plumbed facilities.
- Construction costs, due to water supply and wastewater disposal systems, are much higher than for vault or composting toilet options.

2. “Living Machine” Waste Treatment System:

- A buried settling tank collects solids while wastewater is dispersed and treated through above-ground wetland or vegetated swale; tank requires occasional pumping, and suitable conditions are required for wetlands area.
- Other characteristics are same as or similar to B.1 above; wetlands dispersal and treatment may be more appropriate than drainfield in certain soil conditions.

3. Closed–System Waste Treatment and Water Recycle (e.g., Equaris System):

- Sewage is processed through a self-contained mini-treatment plant within the restroom building or adjacent building; solids are separated and broken down into compost,



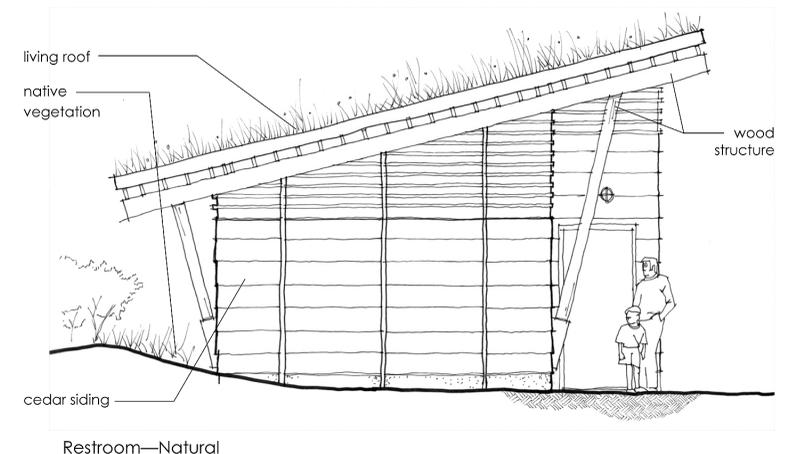
and wastewater is filtered and treated for re-use in toilets and lavatories; system requires periodic maintenance.

- Water supply is still required to supplement losses, but overall water use is much reduced.
- Other characteristics are same as or similar to B.1 above.
- Construction costs, due to treatment plant, are considerably higher than for B.1 and B.2 above.

C. Combined, Partially-Plumbed Systems

1. Vault Toilet and Grey-Water Treatment:

- Toilet waste is collected in vault where it is later removed by pumping (A.2) or is composted (A.3); water from lavatories is filtered for re-use or dispersed through small drainfield or vegetated swale.
- System is designed for non-flush toilets and low-water use lavatories; water source and internal plumbing are required to supply lavatories, but waste system is minimized to handle only grey-water from lavatories.
- Other characteristics are same as or similar to B.1 above.



DRAFT PARK PLAN

Draft Master Plan

Combining elements of the five goals into a unified, quality park is challenging, but a close review of the goals indicates there is a great deal of overlap. At the most basic level, Ravensdale Park needs to provide open space and recreation facilities for the rural residents of King County. By including a balance of facilities for active participation and quiet relaxation, the park's design accommodates all types of visitors and groups of all sizes. The following design elements establish consistency throughout the park:

1. **Clearings in the forest.** Surround the park with a buffer of large native trees that enclose interior clearings and break up the large expanse of the park.
2. **Accessibility for everyone.** Ensure that all area residents, including young, old, and disabled, can access the park by walking, biking, or driving.
3. **Simplicity of materials.** Create a durable palette of park materials that are rural and rugged in character, designed to withstand heavy use and still look good.
4. **Formal active centers.** In each of the park's different areas, establish a center of activity with lawn and/or paved trails that accommodates higher activity levels, allowing the perimeter of the areas to be relatively quiet.

By dividing the park into three or four distinct areas, the large park can absorb multiple and diverse uses without impinging on the enjoyment of its visitors. The park can be divided into the **West Fields** (the western half of the park), the **South Fields and Community Center** (the area around Gracie Hansen Community Center) and the **Community Meadow** (the eastern section of the park). A fourth area, the existing **Fir Grove**, will be preserved in its present state with only a slight reconfiguration of its trail connections.





West Fields

The largest area of the park, the West Fields, will include three baseball fields, one soccer field, open space, and natural habitat. The existing smaller baseball field will remain, to be joined by two larger baseball fields that can accommodate different age groups from high-school age baseball teams down to Little League. The existing all-weather soccer field will be renovated, its surface replaced with synthetic infill to allow the field to be used year-round. Between the fields, a tree-lined open space provides visitors a place to relax after games or warm up before them. Broad arcing paths radiate from the central open space, ending in mountain views to the east and the forest buffer to the west. Various other facilities serve the athletic fields, such as an 80–90 car parking lot located at a new northern vehicular entrance, restroom facilities, and a children’s play area. Families will gather at the convenient picnic shelters and tables adjacent to the open space for barbeques and after-game celebrations.

While the predominant use of the West Fields area is active recreation, almost half the area will be devoted to habitat and trails. A wide forest buffer of native trees will occupy the western edge of the park. A perimeter trail will meander through the buffer connecting the park to the larger regional network. In the southwest corner of the park, adjacent to the Cemetery Reach Natural Area, a meadow of native grasses and perennials will be planted as habitat for the herd of elk that stay in the Rock Creek Valley.





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South Fields and Community Center

The South Fields area will continue to be anchored by Gracie Hansen Community Center. The Center currently serves as indoor training for baseball teams, computer facilities, and a children's play gym. All those uses may continue, depending on concession agreements between private groups and King County, but flexibility will remain for other uses and events. One set of existing bathrooms will be remodeled and the entrance moved to the exterior to provide access to outdoor park users.

Immediately to the south and west of the Community Center, the riparian corridor will be widened and planted with native riparian vegetation. We recommend replacing the existing corrugated metal culvert that frequently clogs, with a larger metal culvert or concrete box culvert that will pass more water through during flood events and allow wildlife access under the road.

A large lawn with arcing paths will move out from the Community Center to two new soccer fields. The soccer fields, constructed of synthetic infill, can be converted to small baseball fields when soccer is out of season, so a small backstop will be placed in one corner of each field. Another large open space will connect the two soccer fields



with the existing Fir Grove area to the north. Both open spaces will serve as space for informal or formal community events, picnicking, warming up for a soccer game, or informal play. The ends of the soccer fields will be surrounded by a low fence to prevent soccer balls from being kicked too far away, and to discourage pets and in-game access to the synthetic fields. The middle of the long sidelines, where teams congregate, will not be fenced. A low seat wall will divide the synthetic surface from the natural lawn while providing seating for fans. By removing fencing from this middle area, the overall rural character of the park is not compromised by fences throughout.

Vehicular access to the South Fields area will occur in three places: from Ravensdale Way at the Community Center parking lot, from Ravensdale Way east of the soccer field, and from the parking lot at the existing Fir Grove. The current through road across the park could be relocated between the South Fields area and the Community Meadow, although there are safety and circulation concerns (see discussion under **Access and Circulation**).



Pedestrians will access the area from the loop trail or across Ravensdale Way from the Gracie Trail.





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Community Meadow

Centered around a large meadow of native grasses and perennials, the Community Meadow area is designed for unorganized recreation and community activities. The eastern portion of Ravensdale Park will be devoted to community activities such as picnicking, Frisbee-playing, and walking. The two active recreation activities are a proposed basketball court and a skate park. These activities will diversify the mix of athletic activities offered in the park and will appeal to other children, teens, and adults who do not necessarily participate in baseball or soccer.

A key feature of the Community Meadow area is the forested buffer around its perimeter, which creates an enclosed environment for retreat and relaxation. A smaller loop trail joins the perimeter trail for a short distance, offering a variety of paths for walks and strolls.

Residents of Ravensdale would also like to locate a small cultural center on the site. The center would celebrate the mining and recreational history of Ravensdale through stories, pictures, and interactive exhibits. The exhibits could be housed in a new building or a renovated historic building from the area. The higher-impact uses, such as skate park, basketball court, and cultural center have been moved north to the edge of Kent-Kangley Road, where there is more activity, leaving the rest of the Community Meadow area for quieter activities.





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IMPLEMENTATION

Phasing

The park will be funded by King County funds, State grant funds, as well as private donations and in-kind services that will not be immediately available. Priorities must be established, according to community interest and amount of fundraising, to determine what can be built first. A phasing plan sets the sequence of installation of park facilities and allows the community to raise support gradually. A number of factors influence the phasing plan:

1. **Efficiency.** It is most efficient to develop the entire park at one time. Without the requisite funds, park planners must decide what can be developed sequentially, so that previously developed facilities are not disturbed by subsequent construction.
2. **Cost.** Fundraising at the beginning of any project is difficult. Installation of small or inexpensive facilities at the beginning provide a tangible, positive momentum that can build until the more expensive items receive funding.
3. **Equity.** Park planners strive for a balance in facilities between the different sports groups, community groups, young and old.
4. **Permitting.** A time-consuming element of any project, permit acquisition influences phasing as it is easier to permit an entire project, rather than multiple permits for each portion.



For Ravensdale Park, the recommended phasing accounts for those factors with a small, initial effort to build support for the project during fundraising, followed by the bulk of the project that can be permitted at one time. The park can be divided into three phases:

Phase 1: Renovation of the existing soccer field can be completed with existing King County funds. It will have a large impact on the sports community, as soccer players could then use the field year-round. The existing baseball field would receive an upgraded synthetic infield. The phase also includes removal of invasive species and planting of portions of the native forested buffer surrounding the perimeter of the park. Planting trees in the initial phase allows them time to establish and enhances the rural and natural character of the park. During planting of the buffer, the community meadows could be graded and hydro-seeded with native grasses and forbs.

Phase 2: Development of the bulk of the park includes two baseball fields, two soccer fields, trails, courts, lawn, meadow, parking, and other support facilities. Additional trees and shrubs can expand the forested, perimeter buffer. Combining most of the park elements in one phase allows permitting to happen at the same time, streamlining the process and facilitating community input. It also increases construction efficiency, although park elements do not have to be built at the same time, just during the permit time-frame as funds are available.

Phase 3: The last phase includes renovating Gracie Hansen Community Center and construction of any other facilities the rural community would need. These items can be completed separately as funds become available without disturbing the rest of the park.



Preliminary Cost Estimate

King County Parks currently has a small amount of money designated for the upkeep and renovation of Ravensdale Park. The rest of the money for the park will need to come from donations raised by the community groups, public-private partnerships, in-kind services, and grants. The following cost estimate is very rough. It does not include funds for inflation, design fees, or contingency. Some of the costs to the project can be reduced or eliminated with donation of in-kind services.

	<i>Item</i>	<i>Number</i>	<i>Unit</i>	<i>Price</i>	<i>Total</i>
Phase 1	West Fields				
	Renovated soccer field	1	ea	\$ 829,000	\$ 829,000
	Renovated baseball infield	1	ea	186,000	186,000
	Scotch broom removal	19.9	acres	360	7,164
	Earthwork	2	acres	15,700	31,400
	Native trees in buffer	2	acres	12,700	25,400
				<i>subtotal:</i>	<i>\$ 1,078,964</i>
	Community Meadow				
	Earthwork	4.1	acres	\$ 15,700	\$ 64,370
	Native trees in buffer	2.1	acres	12,700	26,670
	Community meadow hydroseed	2	acres	7,000	14,000
				<i>subtotal:</i>	<i>\$ 105,040</i>
	Total Phase 1:				\$ 1,184,004

	<i>Item</i>	<i>Number</i>	<i>Unit</i>	<i>Price</i>	<i>Total</i>
Phase 2	West Fields				
	Entrance drive	3250	sf	\$ 8.00	\$ 26,000
	Parking lot for 90 cars	90	space	1,200	108,000
	Curb and gutter	660	lf	22	14,520
	Earthwork	6	acres	13,100	78,600
	Lawn and meadows	4.1	acres	42,000	172,200
	Trees and shrubs	250	ea	250	62,500
	Baseball field, backstop, stands	2	ea	850,000	1,700,000
	Field lighting	2	fields	230,000	460,000
	Paved walkways	3700	lf	12	44,400
	Walkway and parking lot lighting	1	ls	29,000	29,000
	Perimeter trail	3100	lf	8	24,800
	Restroom	600	sf	450	270,000
	Play area	1	ea	55,000	55,000
	Picnic shelters	6	ea	50,000	300,000
	Utilities	1	ls	85,000	85,000
				<i>subtotal:</i>	<i>\$ 3,430,020</i>

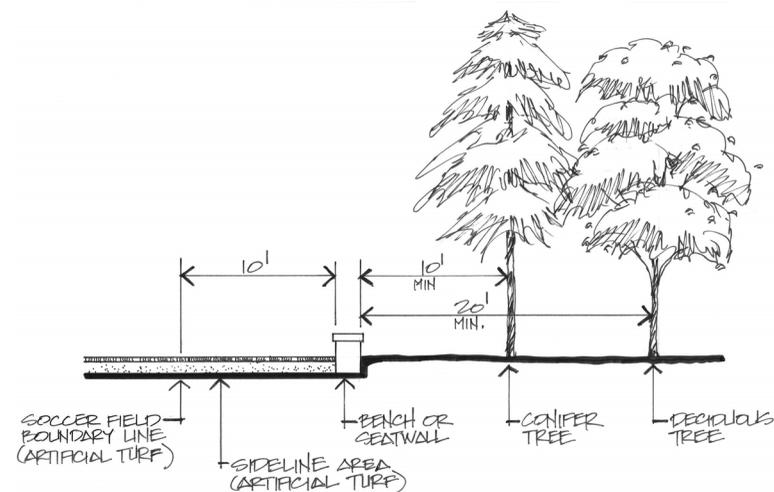
Item	Number	Unit	Price	Total
South Fields and Community Center				
Entrance drive	680	sf	\$ 10.00	\$ 6,800
Parking lots for 40+ cars	44	space	1,200	52,800
Curb and gutter	880	lf	22	19,360
Earthwork	1	acres	15,700	15,700
Lawn and meadows	1.9	acres	52,272	99,317
Trees and shrubs	180	ea	250	45,000
Soccer/baseball fields	2	ea	1,100,000	2,200,000
Field lighting	2	fields	230,000	460,000
Paved walkways	1620	lf	12	19,440
Walkway and parking lot lighting	1	ls	18,000	18,000
Perimeter trail	1430	lf	10	14,300
Restored riparian corridor	44,000	sf	2.50	110,000
Picnic shelters	5	ea	50,000	250,000
Remodeled restrooms	800	sf	400	320,000
Utilities (renovate wastewater)	2000	sf	18	36,000
Utilities (stormwater)	2000	sf	11	22,000
			<i>subtotal:</i>	<i>\$ 3,688,717</i>
Community Meadow				
Entry plaza	8000	sf	\$ 13	\$ 104,000
Through-road	10,200	sf	10.00	102,000
Parking lot for 46 cars	46	space	1,200	55,200
Parking lot for 22 cars	22	space	1,200	26,400
Curb and gutter	720	lf	22	15,840

Item	Number	Unit	Price	Total
Earthwork	4	acres	15,700	62,800
Lawn and meadows	1.3	acres	52,272	67,954
Trees and shrubs	160	ea	250	40,000
Ravensdale cultural center	6000	sf	325	1,950,000
Utilities (wastewater reuse)	4000	sf	21	84,000
Paved walkways	1570	lf	12	18,840
Plaza and walkway lighting	700	lf	23	16,100
Perimeter trail	1210	lf	10	12,100
Picnic shelters	5	ea	50,000	250,000
Basketball court	1	ea	32,000	32,000
Skateboard park	8000	sf	62	496,000
			<i>subtotal:</i>	<i>\$ 3,333,234</i>
				Total Phase 2: \$ 10,451,970
Phase 3 South Fields and Community Center				
Gracie Hansen façade	12,000	sf	\$ 9.50	\$ 114,000
Miscellaneous				TBD
			<i>subtotal:</i>	<i>\$ 114,000</i>
				Total Phase 3: \$ 114,000
				Build-out Total: \$ 11,749,974

Assume: 2008 pricing
No design, permitting, or contingency fees included

Maintenance

Park facilities must be maintained in a consistent and thorough manner to keep them operating smoothly. While Ravensdale Park may be cleaned up and restored by occasional volunteer groups, the bulk of the daily maintenance will be done by King County staff. King County's operations and maintenance budget is small compared to the number of parks spread throughout a large area. The best way to keep the park in good shape at low expense is to limit the number and length of maintenance trips by using quality materials, focusing activities in specific, more highly maintained areas, and providing easy access for maintenance vehicles where needed. Each area of the park—athletic field, lawn and meadow, pavement and forested buffer—will have a maintenance strategy to minimize costs through a systematic maintenance regime.



Athletic Fields

Soccer and baseball fields require the greatest amount of maintenance of any park facility (with the exception of restrooms). At Ravensdale Park, the Design Committee recommends installation of synthetic infill for soccer fields and baseball infields to limit weekly maintenance (see pg. 19 for discussion). Synthetic fields are not maintenance-free: they require the following:

- raking once/2 weeks
- surfactant treatment, twice/year
- trash pick-up, once/week
- irrigation scheduling and repair

Additional maintenance can be avoided by placing the crown or canopy of deciduous trees at least 15 feet from the edge of the synthetic field to prevent leaves accumulating on the field, by excluding food, drink, and pets from the playing surface, and by fencing a portion of the field with a low barrier fence.



Lawn and Meadow

Lawn and meadows include grassy open spaces for informal play, the baseball outfields, and community meadows in the west area. They require the following maintenance:

- mowing, weekly during the spring/summer, monthly during fall/winter
- Trash pick-up
- Irrigation scheduling and repair
- Application of organic fertilizer, such as blood meal, once/year
- Topping with compost or nutrient rich organic matter, once/5 years
- Application of broad-leaved herbicide, once/year

In contrast to lawn, meadows contain a diverse mixture of grass and perennials species, require no irrigation, and are only mowed once or twice a year to prevent development of trees and shrubs. Additional maintenance of lawn and meadows can be avoided by planting cool-season grasses adapted to our climate, by installing a quality healthy soil mix, and by park users embracing a scruffier aesthetic that allows for meadow plants with an unkempt appearance.



Pavement

Parking lots, sidewalks, and entry drives will require the following maintenance:

- Trash pickup, once a week
- Street sweeping, once a quarter (also beneficial for stormwater runoff)
- Re-striping and re-surfacing, once every 10 years

Additional maintenance can be avoided by not planting fast-growing trees with aggressive roots within 20' of paving, by excluding large trucks from using the entry roads and parking lots, and by promoting trash pick-up and clean behavior among active user groups.

Native Trees and Shrubs

Around the forested perimeter of the park, native trees and shrubs will be planted to shield fields lighting and to provide habitat and a cool place to walk or bike on the loop trail. Native trees and shrubs will also enhance the rural character, blending the site into the surrounding forested landscape. The forested buffer will only require low-impact annual maintenance after the first two year of growth, if the following happen:

- a quality and healthy soil horizon is developed before planting
- volunteer work groups have weeding “parties” for two weekends of the year during the first two years
- native plants are selected for their tolerance of dry summers and deer browsing (see pg. 27)
- fussy perennials and groundcovers are not planted or are planted later after the tree canopy (and shade) is established.

Park Structures

The restrooms, picnic shelters, fences, and trash cans require a significant amount of maintenance to ensure park cleanliness and safety:

- cleaning and stocking restrooms, every other day, every day in summer
- repair of fences and tables, once a year
- removal of graffiti, frequency depends on how much ownership the local community and youth feel toward the park ...this can be influenced with events, volunteer groups, work parties, and community involvement.



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