



**Mid Atlantic Region**

# **Wesley Chapel Woods**

**A Conservation  
Subdivision**

# Before Development



**Figure 1:** The site before development in 1988 is almost entirely forested. The darker area across the upper portion of the site is the location of the stream corridor.

# Overview

**Location:** Bluemount Road, Baltimore County, Maryland  
Baltimore metropolitan area

**Year:** 1997 (record plat)

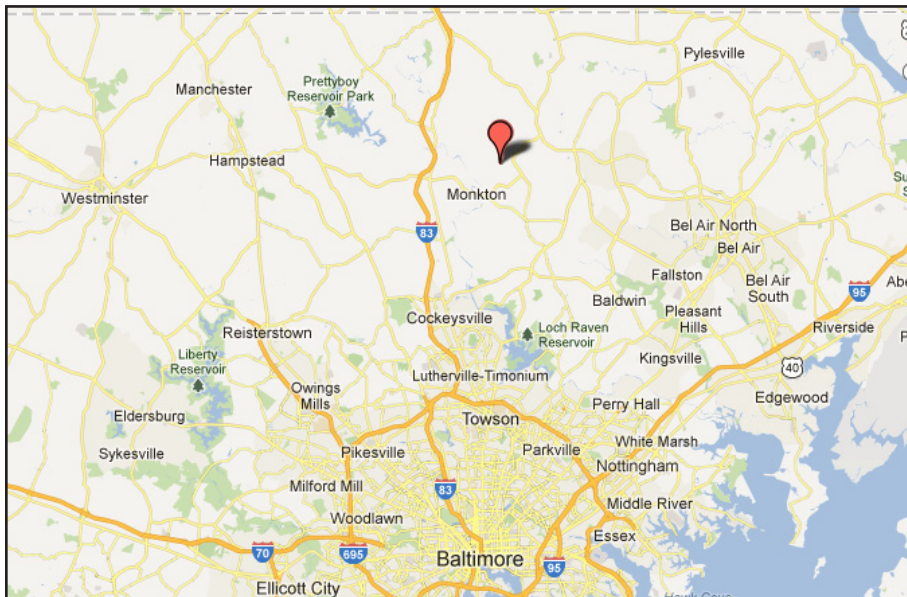
**Developer:** Gaylord Brooks Realty Co., Inc., Phoenix, Maryland

**Planner/Designer:** Land Ethics, Inc., Annapolis, Maryland  
(Elizabeth Brabec and Peter Kumble, principals)

**Development Size:** 169 acres

**Number of Units:** 22 single family units


**Open Space:** 142 acres of total area



**Figure 2:** Location of the site, north of Baltimore in the state of Maryland.

The Wesley Chapel Woods site is located in a sensitive watershed of the Gunpowder River Basin, in Baltimore County, Maryland. The basin of the Gunpowder River is of state level concern for critical habitat, agricultural land protection and as a tributary to the Chesapeake Bay. The sensitivity of the site and region resulted in a zoning designation of Resource Conservation (RC-4). This zoning class limited development to 20 lots per 100 acres, and translated to 33 single family homes on the 169 acre site.

Prior to development, the site was almost entirely forested with mature hardwood trees in a typical oak-maple-beech climax forest type. The goals of the design were to minimize the impact of home construction on the sensitive resources of the site:

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1. the water quality of the tributary stream to the Gunpowder River;
  2. to protect the existing forest cover, a diminishing resource in the region; and
  3. to maximize habitat protection with wildlife corridors, and forest canopy.

While the County zoning allowed 33 lots and required clustering of those lots, the County's cluster requirements were modified for this development in recognition that the woodland and water quality of the basin could be more effectively protected with a modified design approach. Although a bit of an oxymoron, a "dispersed cluster" approach to site design was developed, which met the conservation goals of the site, while slightly modifying the development standards. The dispersed cluster approach permitted the design to more effectively protect the woodland by not requiring the clearing associated with three large clusters of homes, their public roads, and three stormwater management facilities.

Applying the dispersed cluster approach, three development areas were designated on the site. Environmental impacts were minimized by the use of 16' open section private roads as opposed to 21' public roads with curb and gutter. The private roads were field located to avoid sensitive environmental areas and specimen trees. Instead of large amounts of land clearing required under the County's cluster regulations, lots were field sited, maintaining 100 foot buffers between sites, and minimum 500 foot wildlife corridors between clusters. In addition, private landholdings were limited to 1 to 1.5 acres in size, and the clearing on those lots limited to 7,000 sq. feet. The on site clearing associated with the individual house lots was limited through private covenants registered with the deeds.

The stormwater runoff was managed entirely on site. Stormwater was directed as sheet flow off the 16' roads into vegetated verges. The soils are well drained, and the site sloping, therefore the rainfall was absorbed into the forest. During the evaluation 10 years after construction, there was no evidence of erosion or channelization of the stormwater flow. Stormwater from the roofs and driveways of the individual house lots was similarly directed into the surrounding forest, and again, there was no evidence of channelization or erosion.

Although implementing this modified cluster approach resulted in a reduction of density, the financial impact of this was offset by both a saving in development costs as a result of the decreased construction costs of the private roads, and also the lack of stormwater management construction costs. The loss of additional lots was also offset by the increase in value and marketability of the resulting lots surrounded on at least two sides by conservation land.

The development was approved in 1997 and the development sold out in January of 2000.



**Figure 3:** A 2004 aerial photograph showing the site boundaries in red and the 22 house lots in three clusters.

# Ownership



**Figure 4:** Site plan showing ownership of the open space in Wesley Chapel Woods, showing the privately-owned parcels and the conservancy owned by the home owners association (HOA).

Ownership of the development is held by two entities: the private landowners, and the home owners association. The Home Owners Association holds the conservancy land, which comprises 81 percent of the total development. Only 19% of the land was used for single family home development, 11 % less than the 30% allowed by the Resource Conservation zone (RC4) applicable to the site.

**Table 1:** Breakdown of the ownership of the open space by area and percent of total.

<b>Ownership</b>	<b>Parcels #</b>	<b>acres</b>	<b>Area</b>	
			<b>ha</b>	<b>%</b>
HOA	1	137.66	55.75	81
Private	22	26.20	10.61	16
Roads		5.13	2.08	3
<b>Total area</b>		<b>168.99</b>	<b>68.44</b>	<b>100</b>


# Habitat



**Figure 5:** The conservancy area is managed with little to no intervention in the forest stand. Even 10 years after development, there are few invasive species in the canopy or forest floor.

**Table 2:** A summary of the native plant analysis for the site. The conservancy rated very high in native plants and had a very high overall site rating for habitat potential.

	<b>Native Plants</b> %	<b>Plant Cover</b> %	<b>Notes</b>	<b>Rating</b> % of total possible points
<i>Transect 1</i>	88.46	72.22	Quite a few trees of 75+ years old. A lot of seedlings and saplings in understory. Woods do not appear to get any recreational use, one trail along the stream, leaves do not appear to be kicked up from regular walking.	83.33
<i>Transect 2a</i>	100	72.73	Small patch of stiltgrass and smartweed, very minimal. Generally a healthy area. Wetter location near creek, area was not logged, no field trees noted. Wetland obligate species observed, i.e. crested fern.	93.33
<i>Transect 2b</i>	95.83	73.53	Generally a healthy area. Wetter location near creek, area was not logged, no field trees noted. Wetland obligate species observed, i.e. crested fern.	93.33
<i>Transect 3</i>	100	77.5	Generally healthy stand. Has all vegetative layers that would be expected. Far from residential development. Several seedlings and saplings noted. North facing slope, moist, and shaded.	93.33
<i>Transect 4</i>	100	82.86	Generally healthy stand. Has all vegetative layers that would be expected. Close to residential development (M rating). Several seedlings and saplings noted. Road nearby.	93.33
<i>Transect 5</i>	100	84.62	Generally healthy stand. Has all vegetative layers that would be expected. Close to residential development.(M rating) Several seedlings and saplings noted. Residential road nearby. Richer soil here, little sunnier, near clearing of road.	90
<b>Site Average</b>	<b>97.38</b>	<b>77.24</b>		<b>91.11</b>



The conservancy land at Wesley Chapel Woods rated very high in both native plants (97.83%) and overall functional rating (91.11%). The functional rating of the conservancy land was based on high level of plant community vigor, low level of human disturbance, and a low level of invasive vegetation. While the direct measurement of plant species provides one measure of potential habitat within the development, a second measure identifies the land cover and level of human intervention of each open space parcel. A distinction was made between ornamental land cover (trees, shrubs, grasses and herbaceous material that is largely non-native) and natural land cover (trees, shrubs, grasses and herbaceous material that is largely native or at least indigenous to the region). Then each category was further subdivided: natural landscapes into little or no intervention, moderate intervention and those with an active management scheme; and ornamental into minimal (lawn and trees), intensive (lawn, trees, shrubs, herbaceous), and ornamental vegetation mixed with native plantings.

In the Wesley Chapel Woods conservancy land, which composes all of the commonly held open space, the vegetation was entirely composed of natural, pre-development ground cover (trees and natural understory). In the covenants and restrictions for the development, each privately held home site holds a restriction on clearing to a maximum of 7,000 sq. ft, or 10 to 16% of the site. This requirement as not been maintained, since the most recent home sites are almost 100% cleared, and even those with the least clearing have closer to a 25% clearing footprint. If the original clearing restrictions had been adhered to, it would have added approximately 22.7 acres of habitat to the total conservancy area.



# Stormwater



**Figure 6:** The topography of the site slopes to the stream corridor in the northern portion of the site, and the stream flows to the west, a tributary of the Gunpowder River. The homes, roads and driveways were all included in the area calculations for impervious surface on the site.

The development rates very well in impervious surface measures, and also in terms of stormwater best management practices. At an imperviousness of 5.6 percent of the site, it is well below the threshold of 10% imperviousness, commonly accepted as impacting water quality and quantity. Low imperviousness is enhanced by the measures used to improve on-site infiltration, such as a reliance on sheet flow, lack of curb and gutter on streets, and also the use of french drains and occasional rip-rap to obstruct channelization and increase infiltration.

**Table 3:** Total imperviousness of the development is extremely low at 5.6%

	<b>Acres</b>	<b>% of Subdivision</b>
Roads	3.75	2.72
Roofs	3.42	2.49
Driveways	2.34	1.70
Parking Lots	0.00	0.00
<b>Total Area</b>	<b>9.51</b>	<b>5.63</b>

# Recreation



**Figure 7:** Recreation in Wesley Chapel Woods is limited to an informal trail system through the conservancy lands, and a more defined trail along the stream corridor.

Recreation throughout the development is confined to trails within the conservancy lands. Except for the trail along the stream corridor and the traces of some old logging roads, the trails are largely indistinct. However, homeowners reported active use of the woodlands for hiking, particularly among those residents owning dogs.

**Table 4:** Recreational opportunities in the open space, showing over 84 percent of the development with passive open space and just under 2 kilometers of defined trails.

	acres	ha	Area	
			% of open space	% total development
Passive	137.66	55.75	100	81
Total open space	137.66	55.75	100	81
Total development	168.99			
Trails (m)	1,752.11			

Visual quality, defined as access to open space is very high in Wesley Chapel Woods development. The visual quality rating for the development was calculated by identifying the average distance from each home to the nearest community open space. Since the community open space surrounds each home site, the average distance to a greenspace was nil. In addition, each home was surrounded on at least two sides by protected forest, and 11 of the 22 homes were surrounded on all four sides by protected forest.

## Visual Quality