

point and an entrance point to two powerful landscapes - the upland and the lowland of Surrey. We started to think about the site as, in essence, an "upland-to-lowland" site, and how upland to lowland was a better fundamental planning unit for the site, a better way to characterize it, than as just so many square lots in the grid. This site is not just a bunch of squares on a piece of paper; it is a three-dimensional natural environment. The fundamental notion of a "three-dimensional natural environment" should be used as the basic tool for building this or any other site. With this tool, all land value and density pieces can be connected. Using the existing natural systems of a site to decide what kind of development is appropriate will ensure that those same natural systems are integrated and enhanced and, equally important, that the spatial characteristics of the site are emphasized. Applying this principle to our site, since it was an upland-to-lowland site, it made sense to make the upland more of an upland and the valley more of a valley!

As we looked for a way to follow through on this planning principle, we discovered that there were three distinct regions on our site. Together, these regions formed a subset of the upland-to-lowland planning unit, and each had its own special natural and three-dimensional qualities. The first one we called the River Reach North, where the main stem of Hyland Creek connects our site with the other adjacent neighbourhoods to the north and west. The second one we called River Reach Centre, which runs diagonally through the site and captures the bottom of the bowl and the natural centre of the site. The third we called the River Reach South, which is the gradual opening up of the south edge of the bowl towards the Serpentine River Valley. The interesting thing about these three "reaches" of the river is that they are actually different watersheds. Each watershed is a subwatershed of Hyland Creek. Hyland Creek, in the same way, is a subwatershed of the Serpentine River. It is axiomatic: If we are to have a more sustainable urban landscape, we must start rehabilitating watersheds at all scales, from the river system scale to the neighbourhood scale - but *especially* at the neighbourhood scale. Why especially at the neighbourhood scale? Because it is the neighbourhood that pollutes the river, not the other way around.

The Valley of Two Waters

If we can start putting the pieces of the urban puzzle together, linking these watersheds in an integrated natural and spatial

system (a system that allows nature to push back against the grid), then we can start to link these neighbourhood systems together! Eventually, you could have a communitywide ecological and recreational system. This system can connect our people - via walkways, bikeways, and the occasional parkway - along the threads of the streams and riverways. Since water runs downhill, this system will naturally gather the highland districts and join them together in the central river valley. In this way, Surrey may reorient its community, sustainably, towards the unifying Serpentine River and Nicomekl River plain.

So thinking about our site as just one small part of this much bigger system, we took the idea of water one step further; we took a positive stance towards the roads, drains, and service systems of the site. Given our concern for watersheds at all scales, we became particularly interested in how the road and the stormdrain infrastructure could be used in a positive and creative way. Eventually we came up with the idea of "The Valley of Two Waters." In this concept, storm-water (and, potentially, grey water) is held *up and over* the stream system. In most conventional storm-drain systems, water is collected in underground pipes and dumped into the nearest available stream or river, thus creating all kinds of problems for fish and fowl. Even the more advanced alternative storm-drain systems merely mitigate rather than integrate storm run-off. In our plan there are no underground pipes; in our plan, surface stormwater runoff is never released into the stream. We propose to run this water *on the surface*, down streetside swales to a redesigned 64th Avenue. Sixty-Fourth Avenue then becomes a new kind of parkway, which we have called the "Water Parkway." It is lined with artificial marshes that clean the storm run-off and grey water as it flows east to the Serpentine River. As the parkway moves towards the Serpentine River, it becomes wider, more green, more wet, and has bigger marshes and taller trees. In this way, the transportation viaduct becomes a public aqueduct.

The Water Parkway is also a point of intersection and distribution for the multi-modal transportation system. Bikeways and pathways run along, over, and under 64th Avenue to and from transportation stops. The paths lead back up the streamways through a variety of environments, up fairly steep hills and across flat plains, to connect with virtually every residential street. This system connects and expresses both the highland and the lowland realms of the site. The systems of

parkways, pathways, and bikeways are also designed to provide a continuous, diverse, and uninterrupted natural habitat. In this way, the plants, animals, and birds can feel connected, just as do human beings. Since all these systems - transportation, recreation, natural habitat, and ecological protection - are integrated, they are less expensive to acquire, build and maintain. With integrated systems, the city's infrastructure budget can be pooled in order to get multiple and maximum impacts for each dollar spent.

An Integration of the Habitat Structure with the Cultural Structure

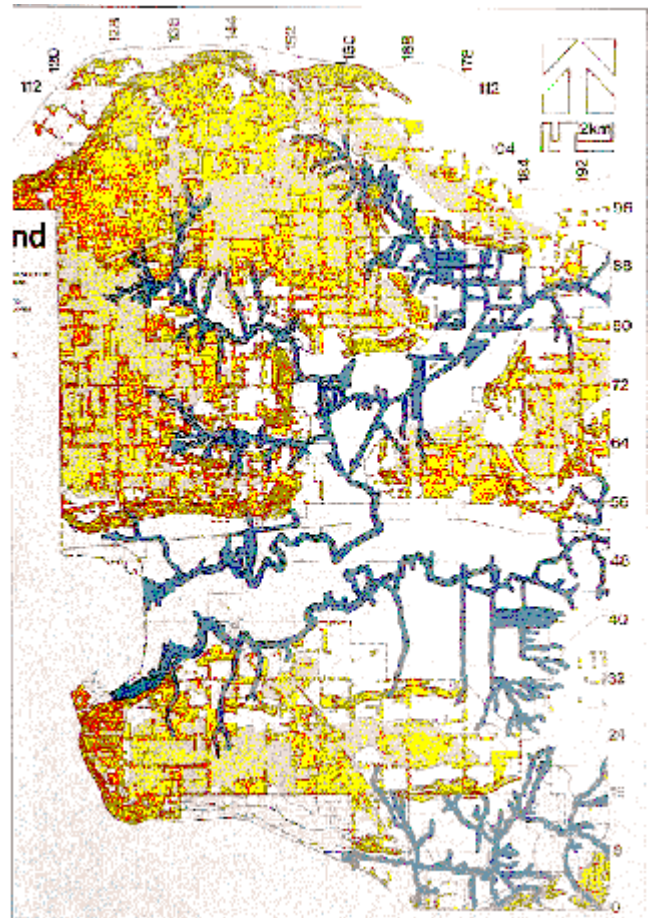
In our plan, most of the public functions are integrated with the natural and recreational systems. Since those systems come together in the centre of the site, this is where we also locate public functions. In this way, the cultural structure and the habitat structure become one integrated system.

Residential neighbourhoods surround the centre of the site. We worked at densities of about eighteen units per acre, which sounds fairly dense. But if you handle the architecture correctly, you still have enough space for everybody to have their own garden. Much higher-density mixed commercial, light industrial, and residential developments are located along the King George Highway transit way. The monumental grove of Douglas Fir, situated strategically at the curve of King George Highway, where it is visible for miles in both directions, has been preserved to focus the district. The district is transit friendly and easily accessible.

As the density on the ridge lands increases, the basic form of the site is emphasized; low-density housing is located at the bottom, merged with and subordinate to the forest, high-density housing is located at the top, creating a crown for the hill and a very important landmark for the city.

In this plan, we begin to see a very different way of organizing the city. This site focuses not on the highlands, but on the waterways down to the river valley. Civic and recreational functions are found in the lowlands, while high-density growth is found on the ridge. Waterways guide the movement of people and animals, emphasizing the basic skeleton of this "City of Parks" - the streams. This language of integration can be used on this site to great effect. More important, this language of integration can and should be used throughout the many upland-to-lowland areas yet to be developed in Surrey. If this were to be done, hundreds of millions of

dollars of unnecessary expenditures would be avoided, scores of miles of recreational trails would be in place, the salmon streams would be protected, our housing would be more affordable, and the special three-dimensional qualities of the Surrey natural landscape - its very special sense of place - would be emphasized.



Top right:

About half of Surrey's land area is protected from urban development, as it lies within the boundaries of the Agricultural Land Reserve (shown in white). Most of the citizens of Surrey live in the brown-tinted upland areas, particularly in the highest areas (shown in light brown).

Bottom right:

The river valley area appears as an empty white area in most city planning documents; the one shown here is but one example. Interestingly, this map also shows how many "housing opportunity" areas are located at the edge of this river valley. This plan also clearly shows how extensively the river and stream system penetrates into many parts of the community.