

ON COURSE WITH NATURE MAPS CAN IMPROVE YOUR ENVIRONMENTAL PLANNING INITIATIVES

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WHEN WAS the last time you saw a golf course property map that provided information about the topography, soils, or surrounding land uses? How about the original golf course development plan that provides historical informa-

tion on the site's original contours, storm-water drainage system, irrigation layout, native plants, and the list of proposed plantings? Have you looked at the golf course aerial photo that hangs in the clubhouse and taken note of how the course fits

into the community, the watershed area, and wildlife corridors? Do you know where the nearest aquifer recharge area, public drinking water supply reservoir, or the nearest stream or water body are located? Have upstream land uses contributed to increased flows or

Environmental Questions and Possible Sources of Answers

Surface Water Quality Management and Protection

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| • Where does water leaving the golf course drain to? | Topographic maps, stormwater drainage maps |
| • Are there areas of the course where buffers can be established? | Aerial photos, topographic maps |
| • Where does the drainage water from wash-off areas end up?
Do drainage catch basins or surface areas drain to sensitive areas on-site? | Stormwater drainage plans, aerial photos, wetland maps |
| • Are historical records of stream or water quality available? | Citizen monitoring groups, water districts, local fishing groups |

Groundwater Contamination

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| • What soils exist on the property? Do certain areas have a seasonally high water table? | Soil maps |
| • Where is the nearest well or aquifer recharge area used for public or private drinking water? | Local health department, regional water district maps |
| • What areas of the golf course have been identified as sensitive, such as high water tables, wetlands, streams, and should be managed with special attention to chemical or fertilizer applications, or construction activities? | Soil maps, wetland maps, surface water classification maps |

Wildlife Habitat

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| • What plant materials are native to the area? What wildlife species would be expected? | Natural resource inventories, U.S. Fish & Wildlife Service, native plant societies |
| • Has a site-specific wildlife inventory for the property or nearby areas ever been conducted? | Local or county planning commission or engineering department |
| • Are threatened or endangered plant or animal species present in the area? | State natural heritage programs, U.S. Fish & Wildlife Service divisions, local wildlife groups |
| • Do the golf course natural areas connect to outside natural areas, providing important corridors for wildlife movement? | Aerial maps, municipal or county planning agencies |
| • What migratory species travel through the area, and what needs do they have? | U.S. Fish & Wildlife Service, local birding groups |

Water Use

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| • How many acres of the golf course are irrigated, and what considerations have been made for reducing the acreage that receives irrigation? | Aerial maps, topographic maps, soil maps |
| • Do any courses in the area use effluent water? Has this option been investigated for future incorporation on your course? | Local and county water districts, local and county engineering departments |
| • If your course relies on on-site water supplies, has the impact of withdrawal from the stream or well been reviewed recently? | Local water districts |



Aerial photographs can be used to identify land uses, water features, wildlife corridors, and other valuable information.

degraded water quality in the stream running through the course?

In asking yourself these questions, many more come to mind. It is imperative for sound environmental management to have an understanding of how the golf course fits into the surrounding ecosystem. Many sources of maps are available to the public and contain valuable information addressing these issues.

Concern about surface water and groundwater quality, loss of natural areas, wildlife habitat, and use of limited water resources for irrigation are national issues of the '90s. No two golf courses are alike, and each is affected differently by environmental concerns, based on existing site conditions. It is important to ask yourself a number of questions in the search to increase your knowledge about your area. Using maps and other sources can help answer many of these questions.

Maps are important environmental planning tools and are used by environmental consultants and golf course architects in preparing site inventories. Local and county planning agencies and engineering agencies often have maps available for review. Some maps may be purchased for a reasonable fee. Below is a partial list of map sources and other information resources.

Reference Agencies

- United States Geological Survey (USGS). This map sales office, located in Colorado, is known as map central. A good source for USGS topographic maps and more. Call (303) 236-7477.

- Natural Heritage Program. Each state has a program to protect threatened and endangered species. These programs are administered nationally by the Nature Conservancy. Call (703) 841-5300.

- USDA Soil Conservation Service. Soil surveys are available describing physical and chemical characteristics of the soils in a survey area, usually by county. These detailed maps are used by farmers, ranchers, and county, state, and federal agencies for land management. The maps are available for review at county conservation districts, libraries, and other agencies.

- United States Fish and Wildlife Service (USF&WS). State wildlife management divisions can provide information about area wildlife and endangered or threatened species. The USF&WS often is affiliated with the state Natural Heritage Program.

- U.S. Army Corps of Engineers. The permitting authority for wetland regulations. District offices located nationwide have national wetland inventory (NWI) maps available for review. Help in interpreting maps is available at U.S. Army Corps of Engineers offices.

- Engineering and Planning Departments (local and county). One of the best places to begin collection of information. In addition to the USGS topographic maps, NWI maps, and soil surveys, these agencies often have aerial photos, stormwater drainage plans, and detailed information about the natural resources of the community.

Maps are a valuable tool for knowing your property. For many, the winter season provides the perfect time to put a little time and effort into ENVIRONMENTAL PLANNING. Make the effort to identify golf course areas that are environmentally sensitive, and incorporate action plans to protect and preserve designated areas, as well as identify areas that have been disturbed and need reestablishment. Information gathering and a thorough understanding are the first steps.

Valuable Maps and Reference Sources to Obtain

1. USGS topographic maps
2. National wetlands inventory maps
3. Satellite aerial photographs
4. Endangered and threatened wildlife and plant lists
5. Stormwater drainage maps
6. Soil maps
7. Local and county master plans
8. Local and county resource inventory maps

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