

GIS based Water-pollutant Buffering Zone Management

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S. Korean Government has accelerating its efforts to enhance the quality of the drinking water. The Ministry of Environment has declared the law of securing water-pollutant buffering zone to minimize the inflow of the point and nonpoint sources into the drinking water sources. As a first phase of installing nation-wide water-pollutant buffering zone, approximately 300km buffering zone has been delineated along the South and North Han river, the major drinking water sources for the capital area of S. Korea, which has the population of more than 12 millions. The buffering zone has the width of 1,000 meter for the special protection area, and 500 meter for the remaining area from both ends of the river. The major works have been done in three stages. Firstly, the boundaries lines of the buffering zone was delineated on the digital topographic maps. Secondly, the maps were overlaid with the cadastral maps to identify individual land parcels, the street address of the major pollutant discharging facilities, and all different types of pollutants including livestock. Thirdly, the field work has been done as a verification. Once the buffering zone was generated, all the information for the buffering zone were created or imported from other government agencies including official land price, details of the major manufacturing facilities discharging considerable amount of pollutants, major motels and resorts, not to mention of restaurants, etc. Also, major livestock houses were located to identify the path of the pollutant inflow to the drinking water source. Further works need to be continued such as purchasing private lands within the buffering zone and change the land use in the efforts to decrease the pollutant amount and to provide more environmentally friendly space. Also, high resolution satellite imagery should be utilized in the near future as a cost-effective data source to update all the landuse activities within buffering zone.

Keyword : Water-pollutant buffering zone, Cadastral map, Topographic map