Spatial Cadastral Databases for Land Administration and Land Records Management

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Key words: Cadastre; Digital cadastre; Land management; Land readjustment; Security of tenure; Valuation; GIS

SUMMARY

The use of Geographic Information Systems (GIS) in the development and maintenance of land administration systems has become increasingly widespread. A modern land administration platform must support Fit-For-Purpose workflows, data management, and data sharing — all of which are enabled by GIS technology.

Maintaining a spatial cadastral database of parcel boundaries provides significant benefits for planning, registration, and valuation. Such a database can represent both surveyed and recorded boundaries, along with the legal documents and rights associated with them.

In national, provincial, and state government jurisdictions responsible for preserving survey records, evidence defining the boundary positions of surveyed parcels is received, examined, and documented upon approval. A corresponding spatial cadastral database can represent these records and be made accessible to other agencies such as land claims commissions and deeds registries.

For deeds registries, a cadastral database can also serve as a repository for approved and recorded parcel boundaries. Integrating both surveyed and registered data within a common GIS environment provides powerful tools for property research, valuation, and inter-agency collaboration.

This paper presents examples of how Esri's technologies — including the Parcel Fabric, ArcGIS Field Maps, and ArcGIS Hub — support a centralized management of land records, enable efficient data sharing among agencies, and improve citizen access to land information.

Real-world examples will demonstrate how these tools streamline land administration workflows, reduce land disputes, and promote transparency in land transactions.
