

Navigating through Australia's landfill data

RAY COX OF LANDAIR SURVEYS EXPLAINS WHY A UNIFIED SYSTEM OF LANDFILL SPATIAL DATA COULD HELP OPERATORS SAVE MONEY AND TIME WHEN IT COMES TO DECISION-MAKING AND AUDITING.

Environmental management can be costly and time consuming for councils and private sector landfill operators.

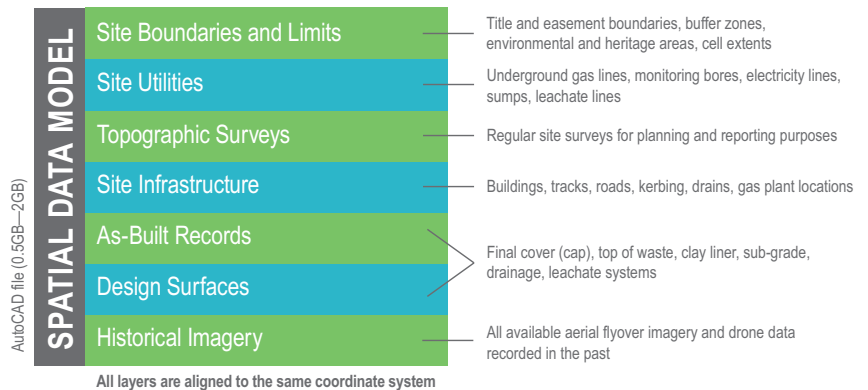
With a range of restrictions in place, operators across the nation need to demonstrate their licenced facility is in compliance with conditions set by the Environmental Protection Authority (EPA). While specifics of the conditions vary from state to state, EPA Victoria as an example requires third parties to review whether operators are complying with their regulations from initial landfill construction up to final site rehabilitation.

One company aiming to make landfill data management easier is Landair Surveys. Based 24 kilometres east of Melbourne's CBD, the national company provides aerial and land surveying services to the landfill sector.

Ray Cox, Landair Surveys Director, says one of its key services is providing landfill operators with a dynamic consolidated file of their landfill spatial data known as a spatial data model. Data stored in this single point-of-reference file can include historical flyover imagery, as-built layer surveys, site utilities and infrastructure, design surfaces and more.

He says Landair's data management service was developed several years ago after one regional council had issues aligning and interpreting its landfill data.

"Some landfills may have up to 20



years worth of miscellaneous spatial data stored digitally (or even physically) in a variety of locations. The ad-hoc nature of data storage can often prove difficult to collate years after the effect when important decisions need to be made regarding landfill management."

He explains that decision-making based on previous spatial data is further complicated by coordinate systems that change throughout the years.

Because the Earth's tectonic plates are constantly moving, the Australian Government through Geoscience Australia updates the coordinate system roughly every few decades.

The overall framework, known as the Geocentric Datum of Australia, was last updated in 1994. This was developed to accommodate the rise of Global Positioning System technology, with a global coordinate system introduced called the Map Grid of Australia (MGA94).

"It's not unusual for long-standing

landfill sites to have spatial data measured in up to three different coordinate systems. This will be further complicated in the near future when Geoscience Australia updates the Geocentric Datum of Australia in 2020 adding another level of complexity for landfill operators in spatial data management," Ray says.

He explains one recent example of the benefits of a single spatial model concerned a proposed extension of an existing landfill cell. Landair Surveys was given the new design file for setout.

"After loading the proposed extension into the spatial data model, we realised that further excavation would intersect some of the site's underground electricity lines.

"Based on this discovery, the proposed extension was shortened to accommodate the existing utilities. If they had started digging, and hit those electricity lines, who knows what would have happened?" ■