Keeping it Simple: An Alternative Approach to Site Life

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It is easy to continue to do things as they have always been done, and site life reporting for a landfill is no exception. Traditionally, site life calculations have been highly dependent on population growth projections and per-capita disposal rates. However, as experienced since the onset of the COVID-19 pandemic, even optimistic projection rates can underestimate regional growth.

Sometimes the use of predetermined growth rates and changes in disposal trends result in unanticipated loss of site life. However, identifying an accelerated volume consumption trend is often delayed due to the need for multiple data points over several years. Once identified, what kind of adjustments can be made to the model to address these issues?
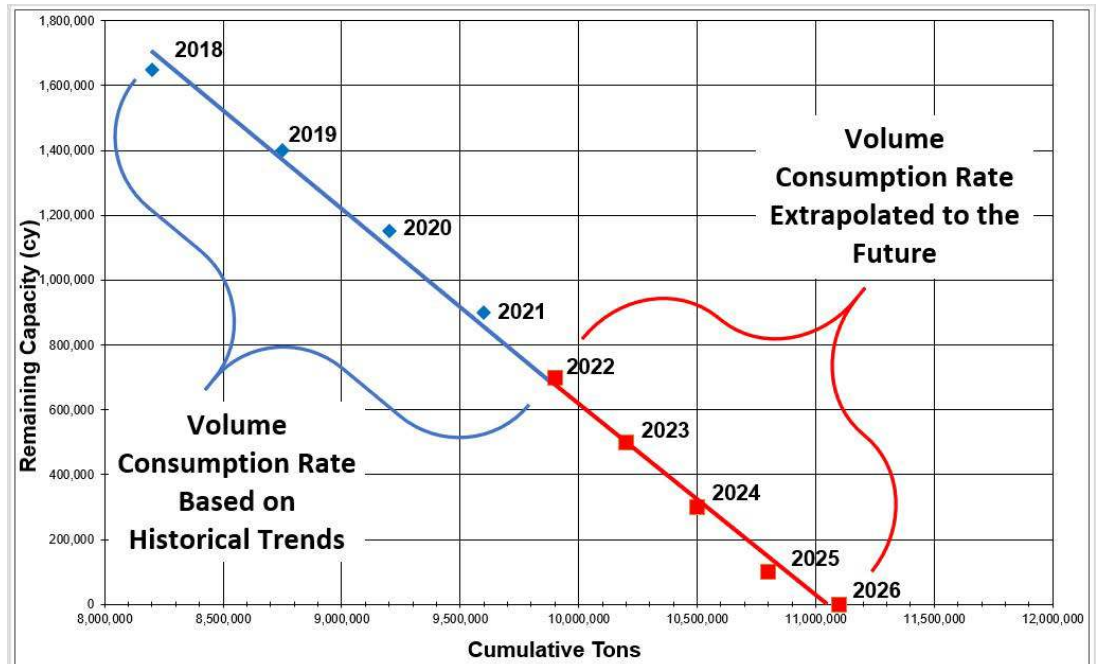
Of course, we could adjust population growth rate, the per capita disposal rate, or the assumed density of future waste, but it will still take a number of years to gauge how those changes affect the year-to-year site life. Instead, we can return to the historic data that encompasses the emerging trend and frame the problem differently. *How can we simplify the calculation to reduce the number of assumed variables?*

The foundation of site-life calculations is rooted in volume consumption rates, not necessarily population growth, economic environment, or service area industry. We want to predict when the remaining volume will run out. The Remaining Capacity Method (RCM)[1] does just that.

RCM uses previous volume and tonnage data to develop a graphical relationship between remaining airspace and tons of waste in place.

RCM graph showing volume consumption trending toward zero cubic yards remaining.

A linear volume consumption trend is plotted through data points that is extrapolated to a future date at which zero volume remains. This method can be adjusted to fit the professional's judgement by altering the future waste in place density or the annualized tonnage increases. Unlike traditional calculation methods, RCM ignores population projections and per-capita disposal rates.

Since implementing RCM for a number of our clients, we have observed that the predicted closure year remains more consistent during the annual reporting period. This allows clients to develop more accurate financial and systemic plans while providing a more reliable basis of financial assurance for regulatory requirements.

There are a number of ways to estimate the remaining life of a landfill, many of which rely on population projections to predict future disposal. While those methods remain valid, you may find that previous site life iterations have been less accurate than you had hoped as you are able to observe trends over consecutive years. The RCM presents an alternative way to combine unknown variables into the most influential factor—the rate at which we deplete the remining volume—and uses that rate to estimate a date for when that will occur.

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Note
1. Developed by SCS founder Bob Stearns.