

Contingent Development Expansion and Interpolation

In cases where Contingent Development is entered for some years but not others, TREDIS now interpolates and expands Contingent Development values to other years using rules similar to those used to expand and interpolate Travel characteristics. Trends of increasing or decreasing values are respected between and beyond the years input.

The new interpolation and expansion behavior should simplify data entry for those wanting to enter Contingent Development across multiple years where trends are observed but modeling has not been explicitly done. Imputation between explicit zero values and non-zero values is allowed, as well as beyond the final input year, which is similar to how Travel data is expanded. When no zero value is explicitly set, all years until the first explicit entry are treated as zeros.

Notably, this method is different from the method to expand Travel data across years, but is more intuitive for the behavior of Contingent Development, where discontinuous values are much more likely to be modeled. For instance, if a new factory, warehouse, or other source of employment opens in a given year, it might be very natural to model a large increase in the employment in that year that is a discontinuous jump from the year before.

Commodity Mix Override Expansion and Interpolation

Commodity Mix, the proportion of freight represented by each commodity, is provided by default by TREDIS freight and economy data sources. The specific values depend on the freight product being used. Whatever freight data product is associated with the project, the default commodity mixes can be overwritten by users for a specific year.

With this release, Commodity Mix proportions are also interpolated between years so that override values affect interim years. (Previously, to override commodity mix, each year of travel characteristics was required to be set and updated.) The improved interpolation functionality should make it easier to complete analyses that model diversion and competition across freight modes, as well as transportation improvements for specific sites.

Interpolation methods now apply to both default commodity mixes and manually overridden commodity mixes, a slight change from past behavior. In the new implementation, the freight forecasts for years entered on the *Travel* page will be used directly, with interim years interpolated, to provide consistent behavior across projects with and without commodity mix adjustments. The same year-by-year estimation of default values still allows sophisticated freight forecasting based on economic conditions and development in the regional economy over time.