Model Inputs	Parameters	Units
	• Traffic Speed • Average Signal Cycle Length • Average Red Time Length • Clearance Lost Time • Saturation Flow Rate (optional) • Signal type (optional) • Arrival rate (optional)	• Miles per hour • Seconds • Seconds • Seconds • Vehicle per hour • Pre-timed, actuated, or semi-actuated • Worst, below average, average, above average, best progression
Receptor Location	• Receptor coordinates (x, y, z)	• Meters or feet
Meteorological Conditions[1]	• Averaging Time • Surface Roughness coefficient • Settling Velocity • Deposition Velocity • Wind Speed • Stability Class • Mixing Height	• Minutes • Centimeters • Centimeters per second • Centimeters per second • meters per second • 1 to 6 = A to F • meters
Vehicular Emission Rates[2]	• Composite Running Emission Factor • Idle Emission Factor	• Gram per vehicle-mile • Gram per vehicle-hour

Source: EPA, *User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections*, November 1992 [EPA-454-R-92-006], http://www.epa.gov/ttn/scram/userg/regmod/cal3qhcug.pdf, and *User's guide to Cal3qhc version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections (Revised)*, September 1995, [EPA-454/R-92-006R], http://www.epa.gov/scram001/userg/regmod/cal3qhcug.pdf.
Note:
[1] The CAL3QHCR model uses a two-tiered approach. Tier I, a full year of hourly meteorological (MET) data are entered into CAL3QHCR in place of the one hour of meteorological data that are commonly entered into CAL3QHC. One hour of emissions, traffic volume, and signalization (ETS) data are also entered as is done when using CAL3QHC. In Tier II, the same MET data as used in the Tier I approach are entered into the model. The ETS data however, are more detailed and reflect traffic conditions for each hour of a week.
[2] The latest versions of EPA's MOVES or California's EMFAC should be used to estimate vehicular emission rates used as inputs to CAL3QHC and CAL3QHCR.

E.2.6.1 Roadway Geometry

Roadway geometry is the geometric dimensions of each intersection such as lane configuration, roadway widths, and roadway links. The position of these elements (such as *free-flow* and *queue* links) should be specified by using an x, y, and z coordinate system typically using the center of the intersection as the origin point with a coordinate of (0, 0).

Each free-flow link is placed on each lane group that serves different directions and has different characteristics such as traffic volume, emission factor, width and height. Each free-flow link begins in the center of the intersection and is aligned with the respective approach either in the x- or the y-directions and is positioned in the middle of each lane group. Three meters should be added to either side of each free-flow link to account for the dispersion of the plume generated by the wake of moving vehicles, known as the "mixing zone". A link height of 0 meters is typically applied; however, the model accepts link heights no greater than 10 meters and no less than -10 meters. Queue links are defined as a straight segment of roadway with a constant width and emission source strength on which vehicles are idling for a specified period of time. The queue link is placed at the point where queuing begins at the intersection. A mixing zone width is not needed for queue links since vehicles are not moving and no turbulence is generated. **Figure**