In becoming one of the nation's industrial giants, Los Angeles also became a potential target. In such emergencies, the Police Department forms the city's first line of defense against the paralyzing forces of confusion and panic. Lessons learned from past civil emergencies, earthquake, fire and flood, serve as a valuable foundation for civil defense planning. Civil defense planning is inseparably connected with the police function. In 1954, every officer completed a special radiological defense course.

The Department Manual was established in 1954 to provide officers with a single source of reference to the policy, organization, rules and procedures of the Department. "Sigalert" traffic bulletin broadcast over local radio stations were originally transmitted by LAPD beginning in 1955.

LAPD is unique because it was the only police department among the five largest cities in the United States responsible for maintaining a City Jail System. This marks a departure from the historical role of the police: the task goes beyond arrest and investigation to include detention and rehabilitation. The success of the 137-acre Jail Farm in San Fernando Valley led to the plan to add a new, 588-acre Jail Farm in the Bouquet Canyon area known as the Rehabilitation Center that opened in March 1954. Los Angeles police make over 80,000 drunk arrests yearly, mostly of chronic or habitual offenders. Well aware that the routine jail sentence is no answer to the expensive problem of the chronic alcoholic, the Department opened its Rehabilitation Center. The center was a radical departure from traditional jail. It offered what a jail could not - therapy in the form of healthful outdoor activity, in addition to a balanced diet, planned education, counseling and recreation, and medio-psychiatric attention. The physical plant of the center consisted of ten barracks buildings, an administration building, equipment and produce storage areas, maintenance shops, a kitchen and canning kitchen, a 320 seat dining hall, a recreation building (also used for class, library and church service), and water and sewage systems. In 1954, the center could handle 600 inmates but could easily be enlarged to accommodate more than twice that number if necessary.

The Air Support Division was established as the LAPD Helicopter Unit in 1956 with one Hiller UH-12C three-seat helicopter. Its principal use will be in directing the control of freeway congestion.

With the creation of West Valley (1957) and North Hollywood (1958) divisions, Valley Division was renamed Van Nuys Division.

May 1, 1957, West Valley became the 13th geographical patrol area. The Division was housed in a temporary storefront location until West Valley Station was completed and opened on August 7, 1960. The station was dedicated on August 17, 1960.

In February 1955, the Los Angeles Police Department, through the pages of the internally produced BEAT magazine, conducted a contest for a motto for the police academy. The winning entry was the motto, "To Protect and to Serve" submitted by Officer Joseph S. Dorobek. "To Protect and to Serve" became the official motto of the Police Academy. With the passing of time, the motto received wider exposure and acceptance throughout the Department.