The La Vega Independent School District was formed in 1927 from the consolidation of the Pecan Grove, Oak Grove, and West Brook Schools.

Patrons of the new La Vega schools immediately elected a board whose first mission was to hold a bond election for the purchase of suitable grounds, construction of a school building, and needed equipment. Fifty thousand dollars was approved to meet these needs. Additional funds were received from the sale of the property of the Pecan Grove, Oak Grove, and West Brook Schools. Board members of the new district turned over the task of finding a name for the district to the PTAs of the Oak Grove and Pecan Grove Schools. Pecan Grove PTA favored Bellmead Schools, but Bellmead was not an incorporated city at the time. Since the La Vega school district covers more than the Bellmead area, the Oak Grove PTA suggested La Vega Schools. This name was taken from the Spanish land grant of Tomas de la Vega which encompasses the area where the school was to be built. The final vote was 25 to 4 in favor of La Vega.

Four and six-tenths acres was purchased as the building site for the new school (present La Vega Learning Center campus). This building was constructed fronting Lazarus Street (now Wilder Street), and consisted of ten classrooms, four on the lower and six on the upper floor. The superintendent's office and two restrooms were situated on the lower floor and a bookroom on the upper. An auditorium with a seating capacity of four hundred was built adjoining the main structure on the north. La Vega Primary Center was housed at this site for a number of years in the 90’s and 2000’s.

The high school student body voted on the school mascot and colors. A committee composed of three high school students, the superintendent, and a teacher suggested the mascot and colors. According to one of the students on that committee, they considered that La Vega was a Spanish name and many pirates were Spanish. Hence, they chose "PIRATES" as the mascot. Someone on the committee had seen a pirate movie in which the pirates wore blue and gold. Other colors considered were black and gold, which were turned down because they were the West Waco Junior High colors; purple and gold were turned down because they were Paul Quinn's colors; and green and gold, of course, belonged to Baylor.

The first superintendent of schools was W. A. Smith, with the first school session beginning on the second Monday in September, 1927. A faculty of nine was employed, with two additional teachers hired during the school year. Ten grades were taught that year. Eleventh grade was added in the 1931-32 school year. According to the first annual report to the state, the 1927-28 school year showed a total enrollment of 364 students, 307 in the elementary and fifty-seven in the high school grades. Total enrollment showed a steady increase, with 763 students enrolled for the 1939-40 school year. LVISD also owned two buildings for the education of African-American children, with a total enrollment of 268 in 1927-28 increasing to 288 in 1939-40.

In keeping with the increase in enrollment, the teaching facilities, faculty membership, and building space increased. The first high-school building was built in 1932. It was generally believed that adequate room space for high-schoolers had been provided for a long period of time;
however, as additional subjects were added and the faculty increased, a second building became necessary in 1936.

Athletic programs were instituted in 1932, and the first athletic field was built on Fisher Street in 1940. This stadium was later replaced by a new facility on Beale Street (behind Eastgate Shopping Center). When the current LVHS was built in 1982, a new football stadium and track was constructed next to the high school.

The present La Vega Elementary School was built on thirteen acres east of IH 35 on Wheeler Street in 1953.

The structures at the middle school campus were completed in 1963 on 29 acres east of Bellmead Drive on Loop 340. This campus was named La Vega Intermediate School until the 1981-82 school year, at which time the board agreed to name the campus H. P. Miles Middle School, in honor of H. P. Miles, who was a beloved LVISD band director for many years.

In 1956, East La Vega Elementary was built on eight and one-half acres east of Loop 340 on Highway 84. The name was changed to East La Vega Intermediate School in 1991.

In 1981, fire destroyed a major portion of the La Vega High School main building located on Wilder Street. A $5 million bond issue was passed in 1981, providing the district with an opportunity to build a new high school and expand the number of campuses. This allowed kindergarten and first grade classes to move to the renovated facilities at the old high school campus, and third grade to move to La Vega Elementary School, thus relieving overcrowding at both elementary campuses.

The La Vega Early Childhood Center was built in 1993 to provide childcare services for children of parenting students, employee's children, and community. In June of 1999 the La Vega Early Childhood Center was renamed the La Vega Family Resource Center and was restructured to provide community outreach services as well as childcare services.

Based on the recommendations of a Citizens' Facilities Review and Planning Committee, the Board of Trustees of the La Vega Independent School District called a bond election in December of 1999 for a total of $8,750,000 to provide for capital expenditures to meet the District's needs for the immediate future. A total of 394 votes were cast, 333 for the bond program and 61 against the bond program.

With the funding from the 1999 bond election, the District constructed a new junior high school -- La Vega Junior High School George Dixon Campus, named after former LVISD teacher, coach, and mentor George Davis Dixon. The District also constructed a classroom wing at La Vega Elementary School and implemented a grade reconfiguration at the middle school / junior high level. Seventh and eighth-grade students began classes in the new junior high school in January, 2004. Grades four through six were housed at the newly named La Vega Intermediate School H. P. Miles Campus (formerly H. P. Miles Middle School that served Grades 6-8). An Open House and Dedication Ceremony for La Vega Junior High School George Dixon Campus was held on January 25, 2004.
On February 7, 2004 the residents of the La Vega Independent School District approved a $16,000,000 bond election. A total of 530 votes were cast, 349 for the bond program and 181 against the bond program.

The LVISD Facility Review and Planning Committee consisting of 25 parents, citizens, and educators of the District (including 9 of the 1999 committee members) made the following recommendations to the LVISD Board of Trustees for inclusion in the 2004 bond program:

- Continue reconfiguration of the grade combinations at the District’s existing primary and elementary campuses as facilities allow and provide instructional space for expansion of Pre-K, facilitate effective instruction, and upgrade the curriculum throughout the LVISD.
- Complete rebuilding of the elementary campus on the existing site that will include the addition of two classroom wings, library, cafetorium, P.E. gym, and administrative space.
- Construct a new Primary Center preferably on a site owned by the district. This facility should accommodate the consistent growth at the KG level, allow for expansion of the Pre-K program, and expansion of early childhood services to include four-year olds and qualifying three-year old students.
- Renovate and expand the district’s high school campus (opened in 1983) to allow for curriculum and student services improvements by expansion of the library/media center, addition of a P.E. gym, enlarging the cafeteria, administrative area, and improving student drop-off/pick up/visitor parking area.
- Construct an additional permanent classroom wing at the La Vega Intermediate School H. P. Miles Campus to curtail and/or eliminate the use of numerous aging temporary classrooms.
- Make other improvements to existing District facilities if funds are available.

Due to soaring gas prices and other inflation affecting the construction industry, the District was unable to complete all of these recommendations.

A new La Vega Elementary School was constructed, incorporating an existing classroom wing and covered play area. An Open House and Dedication Ceremony was held for La Vega Elementary School on September 24, 2006.

A new building was constructed for Grades PK and First Grade, and with the new building, the campus name was changed to La Vega Primary School. An Open House and Dedication Ceremony was held for La Vega Primary School on September 24, 2006.

An additional P.E. gym, four classrooms and restrooms were constructed at the La Vega High School campus with the 2004 bond proceeds; however, the other renovations and expansions planned for the high school were postponed due to the excessive increase in construction costs.

Due to budget constraints, the Board of Trustees agreed to close the La Vega Family Resource Day Care Center Program in February of 2006. The Day Care Center operated under several scenarios during its history, with LVISD subsidizing the operation at a substantial cost for most of the years of operation.
In February of 2006, the Board also approved the concept of a districtwide AEP program, and agreed that this DAEP and SUCCESS program would be located at 900 Ashleman after La Vega Primary Center moved into their new building.

On August 24, 2009, the LVISD Board of Trustees called for a single-proposition bond election in the amount of $24,420,000 to be held on November 3, 2009. The bond proposal focused on adding instructional space, complying with Texas Educational Agency (TEA) standards for classrooms, labs and core space sizes, and increasing safety and security. The proposed projects include: a new intermediate school campus; science lab additions and renovations at La Vega High School; and, an expansion of the library, cafeteria and kitchen at La Vega High School An open house was held for the new LVISHPMC and the new construction at LVHS on September 18, 2011.

Construction costs for the new La Vega Intermediate School H. P. Miles Campus came in under budget, so on August 30, 2011, the Board of Trustees approved the construction of an Administration Building at the site of the former La Vega Intermediate H. P. Miles Campus, facing Loop 340. An open house was held for the new Administration Building on June 26, 2012.

On May 15, 2012, the Board of Trustees accepted an offer of $257,500.00 and approved the sale of the real property and improvements, commonly known as the La Vega ISD Administration Building and property, with the address of 3100 Bellmead Drive, Waco, Texas, 76705 to First Central Credit Union.