The site selection committee became the first building committee, and the committee contracted Athens Steel of Athens to erect a steel shell for the multi-purpose building. Construction began spring 1982 on the 200-seat sanctuary. Parishioners completed all the interior work, including Sanctuary, small entrance hall, kitchen, storage room, and a small apartment for Msgr. Tucek. The first Mass was celebrated in the new building on August 22, 1982, and Bishop Tschoepe dedicated the building on September 26, 1982.

About the same time, Deacon Al Riha and his wife, Dell, moved from New York State to Ben Wheeler. Deacon Al continued to assist in our parish until his death in 1992.

In 1984 Bishop Tschoepe gave Msgr. Tucek a new assignment in Dallas, as chaplain of the Dallas Charismatic Community, and assigned Rev. Sam Metzger as pastor of St. Edward Parish and St. Therese Mission. Weekly Mass attendance averaged about 125 people at this time, with about 200 people on first Monday weekends. Deacon Bill Flores, his wife, Maria, and children moved to Grand Saline in February 1985, and Deacon Bill began assisting St. Therese Mission and eventually St. Edward Parish. Both Bill and Maria were instrumental in helping the Spanish-speaking community become more involved in church.

In 1987 the parish added an addition to the multi-purpose building to provide eight classrooms for religious education. Sunday attendance in student classes averaged about 45 students, who represented six different school districts. Adult education classes and the men's and women's organizations continued to meet primarily in the kitchen and entrance area. The new Diocese of Tyler, comprising East Texas, was also formed in 1987.

A milestone event took place in November 1995 when Bishop Carmody assigned Rev. Mathew Edassery as full-time pastor for St. Therese Mission. Fr. Mathew took up residence with Bill Adamski while a new rectory was constructed adjacent to the multi-purpose church building.

Construction on a permanent church building began March 1997 and finished September 1997 with installation of the church pews. Bishop Carmody officially dedicated the new building on October 1, 1997 and elevated St. Therese Mission to the level of a parish. Many generous citizens, benefactors, and parishioners have helped make today's St. Therese Parish a reality.

Looking back on the years of this young parish and its continuous growth, it was determined that a new and larger church hall was needed to accommodate the organizations and functions of the church family and community Ground breaking for the new hall was began on November 10, 2016. Under the guidance of Fr. Selvaraj Sinnappan, and the supervision of Lee Howell, the dedicated work of the building committee members, the construction was began on January 24, 2017. The project was completed and received blessing from the Bishop of Tyler on June 10, 2018. Deacon Larry Edwards by taking pictures documented the construction progress. Today, the new hall serves to organize various events of the parish and the local community.

In 2021, under the direction of Fr. Jesudoss Thomas, renovations began and were completed on the church rectory along with other designated maintenance projects. On June 21, 2021, Fr. Jesudoss Thomas, together with Deacon Larry Edwards, Rihta Koches, Cindy Malouf, and Mike Perez met with Kent Eubanks for the possibility of purchasing 4 acers of land for the future needs of the parish. The land deal was completed and was purchased on August 26, 2021. Almost immediately a new fence was installed by parishioners Mike Perez and the Juan Grijalva families.

Firmly established in the community now, St. Therese has many ministries and organizations. Their purpose is to meet the needs, goals, and desires of the parishioners as well as to minister to the community.

Example the haginning of the parish the Man's Hely Name Society and the Lodice Cyclid have provided manies.

From the beginning of the parish, the Men's Holy Name Society and the Ladies Guild have provided monies through fund raising events to help support the church's operational needs.

The Knights of Columbus was established on May 9, 1997. It should be noted here that in 2015 this group paid, in its entirety, for a new sonogram machine for Canton's Hope Pregnancy Center. St. Therese Charitable ministries provide assistance to all in need county wide.