

June 16, 2016

Project Information

Reconstruction of the **Locust to Spencer Transmission Line**

Description of the Project

Denton Municipal Electric (DME) has identified several projects that are critical to maintaining reliability and allowing Denton to continue to grow. Upgrade/reconstruction of the Locust to Spencer transmission line is one of the projects that is necessary. Information on the project is presented herein (see attached map for project locations and options). The project will consist of reconductoring and/or reconstructing the existing 69kV transmission line that extends along Spencer Road, the DCTA/DART Railway, and Smith Street from the Spencer site to the Locust Substation (located on the west side of S Locust Street).

The existing Locust to Spencer transmission line was originally constructed for operation at 69kV in the early 1960's. In 1999, the line was reconstructed using steel poles in its original alignment to increase capacity and retire ageing wood poles. The line was constructed using 138kV insulators and phase spacing as the first step in a long range plan to eventually convert the 69kV loop for 138kV operation. Even though the line was constructed for 138kV, it continued to be energized at 69kV and is still in service at that voltage. The poles are configured for one transmission circuit and two 13.2 kV distribution circuits, all of which are in service at this time on the existing line. "Transmission" is the term used to describe higher voltage lines that are used to "transmit" large amounts of power from one location to another. Transmission lines are major supply circuits which terminate in substations and are constructed using large towers or poles. "Distribution" is the term used to describe lines that are lower in voltage and are used to "distribute" power from substations to customers around the city. Distribution lines are typically shorter than transmission but can be constructed in lower positions on transmission poles (see the photo above). The proposed upgrade will continue to be



single circuit transmission with double circuit distribution. The poles are expected to be 90 to 110 feet tall. The exact height of each pole for any section of line that is reconstructed will be determined during the design phase of the project after receiving public input.

The fact that the line must be upgraded provides an opportunity for consideration of routes other than the existing alignment. The final route for the upgraded 138 kV transmission line will be determined with public input, staff recommendations, and approval by the City Council of Denton. The total line length will be approximately two miles. DME is in the initial phase of planning and has identified alternative routes that could be considered along with the existing route. Some of the easements along the existing route may be adequate for upgrade to 138kV operation; however, most existing areas are not adequate and must be expanded in varying degrees depending on the final design. Exact easement locations and widths will be determined based on criteria in the National Electrical Safety Code during design of the line to be constructed on the route ultimately selected by the City Council.

The attached drawing shows the existing alignment, and several options for other routes. Route segments may be chosen that are different from those shown. All transmission and distribution facilities will be owned and operated by DME.

Why is the project needed?

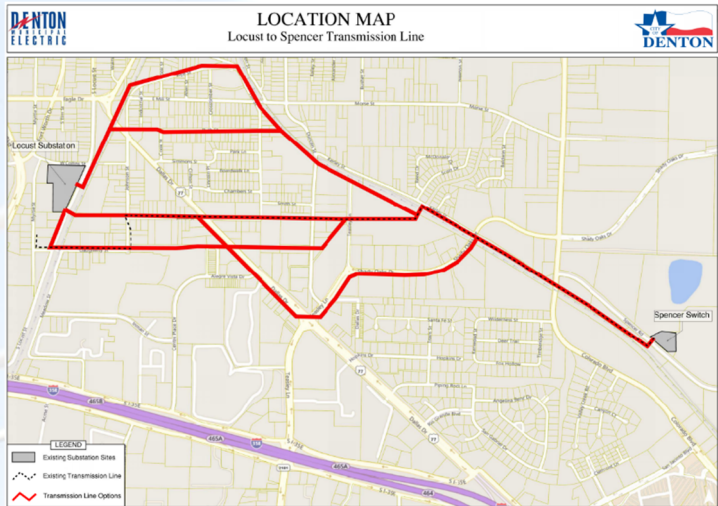
DME transmission lines are interconnected with the statewide transmission system which forms a network that delivers power from generation sites to load centers, and then distributes it to local customers. Interconnected transmission lines provide redundancy to the system and benefits all utilities in an area.

State and federal laws outline specific and well defined performance requirements for transmission systems. DME must comply with these requirements not only to ensure regulatory compliance, but more importantly, to maintain the best reliability of electric service to our customers.

Annual studies are completed to determine whether or not each transmission line segment provides the performance required by the rules. If performance deficiencies are identified, projects must be defined and constructed that resolve the deficit. In determining a solution for a deficiency, alternatives must be considered that take into account benefits, impacts, and costs. Once a transmission line solution is identified, it is generally evaluated through a utility peer review process conducted by the Electric Reliability Council of Texas (ERCOT) before it may be considered for construction. ERCOT is tasked with overseeing the planning and operation of most transmission facilities in Texas. Its function is mandated by state law, and oversight is provided by the Texas Reliability Entity and the Public Utility Commission of Texas.

Transmission Line Alternatives

The existing transmission line between the Locust Substation and the Spencer site is operated at 69kV and was constructed in 1999. Although the existing line is capable of being operated at 138kV, analysis has shown that the capacity of the line must be increased. Outage of certain other transmission lines could cause overloads on this line. As stated earlier, DME is working toward conversion of the 69kV system to 138kV in the 2020 timeframe. To increase the capacity and provide the capability to increase the operating voltage to 138kV, it is necessary to reconstruct portions of the line and reconductor some sections. The final route selection and decisions on configuration of various sections will determine what sections will be reconstructed, and what sections will be reconducted.



The existing transmission line route is the shortest distance between the Locust Substation and Spencer site. A significant portion of the line parallels existing roadways, thus limiting the easement widths needed for the transmission line. The line must continue to terminate in both the Locust Substation and the Spencer site. With these factors in mind, DME has identified multiple alternatives in addition to the existing route for the transmission line. If the line is left in the same location, it will be necessary to expand the easement widths in most areas where the line is not on city property.

The Route and Site Selection Process

The analysis phase of project development only identifies that a project is needed and what the project should accomplish. As in this case for a transmission line where the endpoints are known, the analysis does not mandate a specific route to those end points. The route selection process, which includes requesting public input, is employed to establish the specific route. An alternative set of routes and segments has been identified for the transmission line and is depicted on the attached map. Identification of these routes and segments are the starting point for the route selection process. This open house is intended to communicate the need for the project, and to provide an opportunity for individuals to learn about the project and make comments. Potentially affected land owners and those within 500 feet of any of the alternative segments have been notified by mail of the project and the public open house.

The City Council has approved the transmission line route and substation site selection processes. This process presents the public with several opportunities to provide input. The first step is for DME to conduct an open house where information is made available on the proposed project, questions may be asked, recommendations can be made, and written or verbal comments may be provided. Interested individuals may also contact DME at any time. Contact information

for DME is provided on the comment form handed out at the open house. After all comments received at the open house for a project are compiled, DME will consider all comments, complete additional reviews as appropriate, and will provide a recommendation to the Public Utilities Board (PUB). During its consideration of DME's proposal, the PUB will conduct a public hearing and direct DME to take additional actions or recommend a route and/or site for consideration by the City Council. During its consideration of the PUB's findings, the City Council will again conduct a public hearing to receive comments from interested residents. Ultimately, the City Council will select routes or sites for the proposed facilities.

DME will provide notice by mail for the open house and for the PUB and City Council public hearings.

DME's contact for questions: Brian Daskam
Energy Services Development Officer
Phone: (940) 349-7567
Email: Brian.Daskam@cityofdenton.com

Timeline for the Proposed Facilities

Following approval by the City Council of the proposed site, DME will undertake procurement of land for the proposed facilities. The time required for purchase of the land is unknown at this time. Design of the transmission line will begin as soon as practical after it appears that land issues will be settled. DME hopes to have the transmission line in service before the end of 2017.

Procurement of Land and Easements

Land and easement procurement processes are governed by state laws and local ordinances such as Senate Bill 18. Once the City Council has approved the substation site and the transmission line route, the procurement process will follow these requirements. The City will pay fair market prices for land and land rights. Fair market value is determined by conducting market studies and appraisals.

Attachment: Location Map