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MEMORANDUM

TO: **Robert Spillar**
Austin Transportation Department Director

FROM: **Thomas Pierpoint**
Austin Energy, Vice President for Electric System Engineering & Technical Services

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Austin Energy, Single Point of Contact for I-35 Capital Express

DATE: September 8, 2021

SUBJECT: I-35 Central Express Open House Comments

As Austin is one of the nation's largest and most popular cities, it is important that the priorities of the municipally owned electric utility, Austin Energy, reflect the priorities of the community we serve. The I-35 Capital Express Central Project (I-35 Capital Express Project) provides an opportunity to address issues stemming from a highway that has long divided our community. As such, Austin Energy is committed to building connections so that we can continue to safely deliver clean, affordable, reliable energy to our customers. Austin Energy's promise comes from our status as a public-power utility, bringing more benefits to our community in how we protect our health and our environment. Austin Energy is committed to working with the community and with the Texas Department of Transportation (TxDOT) to develop a vision for what works for Austin now and in the future.

Austin Energy staff have coordinated with TxDOT staff since 2018 on the early design of the Capital Express Project. In response to TxDOT's most recent I-35 Open House (August 10, 2021), Austin Energy staff have submitted comments addressing the utility's specific concerns which include consideration of existing and planned electrical crossings along the path of the I-35 Capital Express Project (impacting an 8-mile segment of Highway I-35 between 290 East to the North to 290 West to the South (SH71) and the provision of adequate room for the placement of duct banks and power poles required for such crossings.

Highlighted in this memo are Austin Energy's issues and concerns associated with the impact of the I-35 Capital Express Project on the two (2) existing substations and one (1) planned

substation, three (3) existing transmission circuits, and various distribution overhead and underground crossings located adjacent to the path of the I-35 Capital Express Project.

Austin Energy Substations

Siting substations in dense urban areas present utilities with numerous challenges: safety, power density, right of way (ROW), potential community opposition and the total cost of land and construction. Austin was originally electrified many decades ago, and, like the City's water, sewer and highway infrastructure, the power distribution network must be continually maintained, expanded, and updated. Given the density of Austin and the cost of land in the central core of Austin, Austin Energy central substations must not only support the current needs of a vital and booming City, these critical facilities which are not suited for relocation, must also be preserved, maintained, and upgraded in order to support the projected power needs of the City. Austin Energy's specific concerns with respect to the three (3) substations along the path of the I-35 Capital Express Project are listed below.

Rainey Street Substation (706 ½ Lambie Street)

Owned by the City of Austin since 1955, the Rainey Street Substation property has been maintained by Austin Energy since 2012 as a future substation site. In order to meet projected downtown Austin electric needs and to perform necessary and time-sensitive upgrades at the Brackenridge Substation, Austin Energy kicked off the Rainey Street Substation Project in March of 2018. Austin Energy commenced engineering and design work and community engagement efforts, and, in October of 2018, Austin Energy representatives met with TxDOT to discuss access to the substation in light of its location along the I-35 frontage road and in recognition of TxDOT's announced plans to rebuild the City of Austin I-35 corridor. These discussions were held in order to identify appropriate locations for maintaining the existing alignment of overhead lines and for the siting of the electric duct banks necessary to connect the existing Austin Energy Brackenridge Substation and the proposed Rainey Street Substation. Discussions and planning between Austin Energy and TxDOT in relation to the Rainey Street Substation Project have been ongoing during the three years since the inception of this major Austin Energy substation project.

Staff of Austin Energy and TxDOT developed understandings based upon meetings held, information exchanged, and communications received from TxDOT representatives in 2018 and thereafter. Based upon these understandings and discussions, Austin Energy has proceeded with the planning and engineering necessary to design and site facilities to bring power to the new substation site by maintaining the existing overhead circuits to the south and a duct bank running north along the existing I-35 southbound frontage road at a 20' depth (TxDOT communicated to Austin Energy that 20' was a sufficient depth to meet clearance requirements under the frontage road pavement).

Following is an update for this area based on the current Alternatives 2 and 3 proposed by TxDOT:

- As of August 26, 2021, Austin Energy has received TxDOT approval of a Temporary Construction Driveway from the I-35 frontage road, just south of River Street, for the construction of the Rainey Street Substation. Austin Energy widened its planned sidewalk on the east side of the Rainey Street Substation site to accommodate TxDOT and Austin Energy as a Shared Use Path. Rainey Street Substation construction is expected to commence in October 2021.
- Austin Energy Circuit 1015, which connects the transmission system from the Pedernales Substation (@Holly Street) to the new Rainey Street Substation, will require a new alignment, likely with easements through a residential neighborhood with existing overhead distribution, on the east side of I-35 due to the increased ROW.
- The proposed East Avenue Duct Bank, from the west side of I-35 heads north from the Rainey Street Substation to interconnect with the Brackenridge Substation, alignment is approximately 6' to centerline of the duct bank in the southbound frontage road from 12th to Lambie Streets (estimated depth: 20'). The Austin Energy design is currently at 50%. Tunneled lanes under the Capital Metro Red Line crossing at 4th Street (Section I-I) are in conflict with proposed frontage road alignment. Austin Energy will be required to change the East Avenue Duct Bank design to tunnel the duct bank under lanes (estimated depth ~40'). This is a 20' change in depth for Austin Energy's design, and implications such as cost, maintenance, cable rating, etc. are unknown at this time.

These TxDOT changes would cause significant delay and could mean that Austin Energy will need to acquire additional downtown property in order to construct the necessary duct bank to fully integrate the Rainey Street Substation into the downtown Austin power grid. Austin Energy will continue to work cooperatively with TxDOT staff; however, the necessity of the on-schedule completion of this the in-flight Austin Energy East Avenue Duct Bank project can proceed on schedule, as timely completion is critical to reliably serve the power needs of the City of Austin.

Brackenridge Substation (1300 ½ N. I-35 Service Road):

The Brackenridge Substation is an existing Austin Energy substation located on the I-35 west frontage road and it is an essential component of the Austin Energy downtown power grid. Upon the completion of the Rainey Street Substation, it is Austin Energy's plan to rebuild and upgrade this substation. TxDOT communicated to Austin Energy in 2018 that it was considering preliminary plans to significantly change the elevation of the frontage road immediately adjacent to the substation (and which provides the only access to this substation) and eliminate one of the driveways to the substation. Austin Energy representatives communicated to TxDOT that a grade change in the frontage road would render this substation inaccessible and that the driveway could not be eliminated as it was necessary in order to maneuver Austin Energy trucks

within the substation. Accordingly, TxDOT indicated that it would adjust its plans and not significantly change the current grade of the I-35 frontage road at this location, nor would it eliminate the driveway.

Following is an update for this asset based on the Alternatives 2 and 3 proposed by TxDOT:

- It is unclear from reviewing Alternatives 2 and 3 whether maintaining the access to two (2) driveways is being contemplated by TxDOT. The input at the Open House indicated it could be a drawing error that only one of the driveways was indicated as remaining.

Austin Energy appreciates TxDOT maintaining access to this substation in its current plans and Austin Energy asks that TxDOT continue to accommodate Austin Energy's access requirements for maintaining both driveways to this substation as it finalizes its plans for the I-35 Capital Express Project.

Fiesta Substation (3817 ½ N. I-35 Service Road @ 38th Street)

The Fiesta Substation is located east of the I-35 Highway. It is Austin Energy's understanding that the current plans for the I-35 Capital Express Project will not affect this substation, but that this project may have an impact on the parking lot adjacent to this substation. As this critical electrical facility is located in close proximity to the I-35 Capital Express Project limits of construction, please be aware that this is a significant Austin Energy facility and that the preservation, and the continued accessibility of this substation is a priority to Austin Energy.

Following is an update for this area based on the Alternatives 2 and 3 proposed by TxDOT:

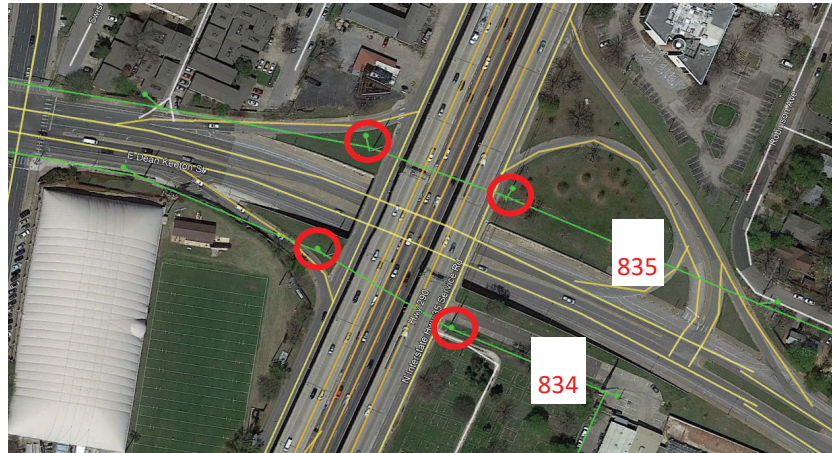
- It is unclear from reviewing Alternatives 2 and 3 whether maintaining the access to the nearest driveway access to the substation from the frontage road is being contemplated. The input at the Open House indicated it could be a drawing error that only one of the driveways was indicated as remaining.

There are other access points to this substation from 38th Street, but the I-35 Highway frontage road is most desirable. Austin Energy appreciates TxDOT maintaining access to this substation in its current plans and Austin Energy asks that TxDOT continue to accommodate Austin Energy's access requirements to this substation as it finalizes its plans for the I-35 Capital Express Project.

Other Austin Energy Assets Impacted

Transmission:

At the intersection of Dean Keeton and I-35, there could be significant modifications to I-35. Although Austin Energy's existing infrastructure in this area, Circuits 834 and 835, do not appear to be in direct conflict, there will be modifications required. The overhead transmission structures in this area are points of intersection for the circuits, and



therefore any changes to these structures have a cascading effect to other structures upstream and downstream of the structures. Additionally, any modifications to these structures will require the transmissions structures to be designed to cross the existing elevated I-35 infrastructure. Easements will likely be required to modify Austin Energy infrastructure based on the proposed Alternatives, where the University of Texas could be one of the primary entities for which easements will be acquired.

Distribution:

For the Airport Boulevard to Martin Luther King Junior (MLK) sections (Alternative 3 was the primary alternative evaluated in this section), following are the potential areas of conflict:

- In many areas where I-35 highway is widened and TXDOT acquires new ROW, there are numerous Austin Energy overhead structures that will be impacted and are potentially in conflict and will be required to be moved to newly acquired ROW.
- Any changes that increase the elevation of existing highway infrastructure (e.g., upper deck or addition of flyovers), in these areas create conflicts for Austin Energy as the crossings are currently mounted on maxed-out-height poles (85-100') at:
 - 38th ½ Street
 - Concordia Ave
 - E. 32nd Street
 - 30th Street
 - Manor Road

For the MLK to Highway 71 project section (Alternative 2 was the primary alternative evaluated in this section) there are six (6) existing potential areas of conflict:

- In many areas where I-35 highway is widened and TXDOT acquires new ROW, there are numerous Austin Energy overhead crossing structures (e.g., both east and west) that will be impacted and are potentially in conflict and will be required to be moved to newly acquired ROW. The overhead locations are at:
 - 11th Street
 - South of Lambie Street
 - Riverside Drive
 - Oltorf Street
 - South of Woodward Avenue
- 3rd Street Underground Crossing: There will be a conflict with below grade lanes/tunnel under the proposed Capital Metro Red Line. Austin Energy believes there is a possibility of moving from underground to overhead structures in this area, but extensive sequencing will be required (e.g., overhead infrastructure must be in place before removing the underground Austin Energy infrastructure and lowering lanes).

Conclusion

Siting electric substations and the associated transmission and distribution infrastructure in and rebuilding highways through the dense urban core of a significant sized city is challenging. Regardless of the build Alternative 2 or 3 selected for I-35, it is imperative that TxDOT representatives continue to work cooperatively with Austin Energy staff and that the plan ultimately selected for this major highway rebuild do not negatively impact Austin Energy's ability to timely complete the Rainey Street Substation and East Avenue Duct Bank or its ability to continue to operate its existing substations which are critical electrical infrastructure supporting the City of Austin.