

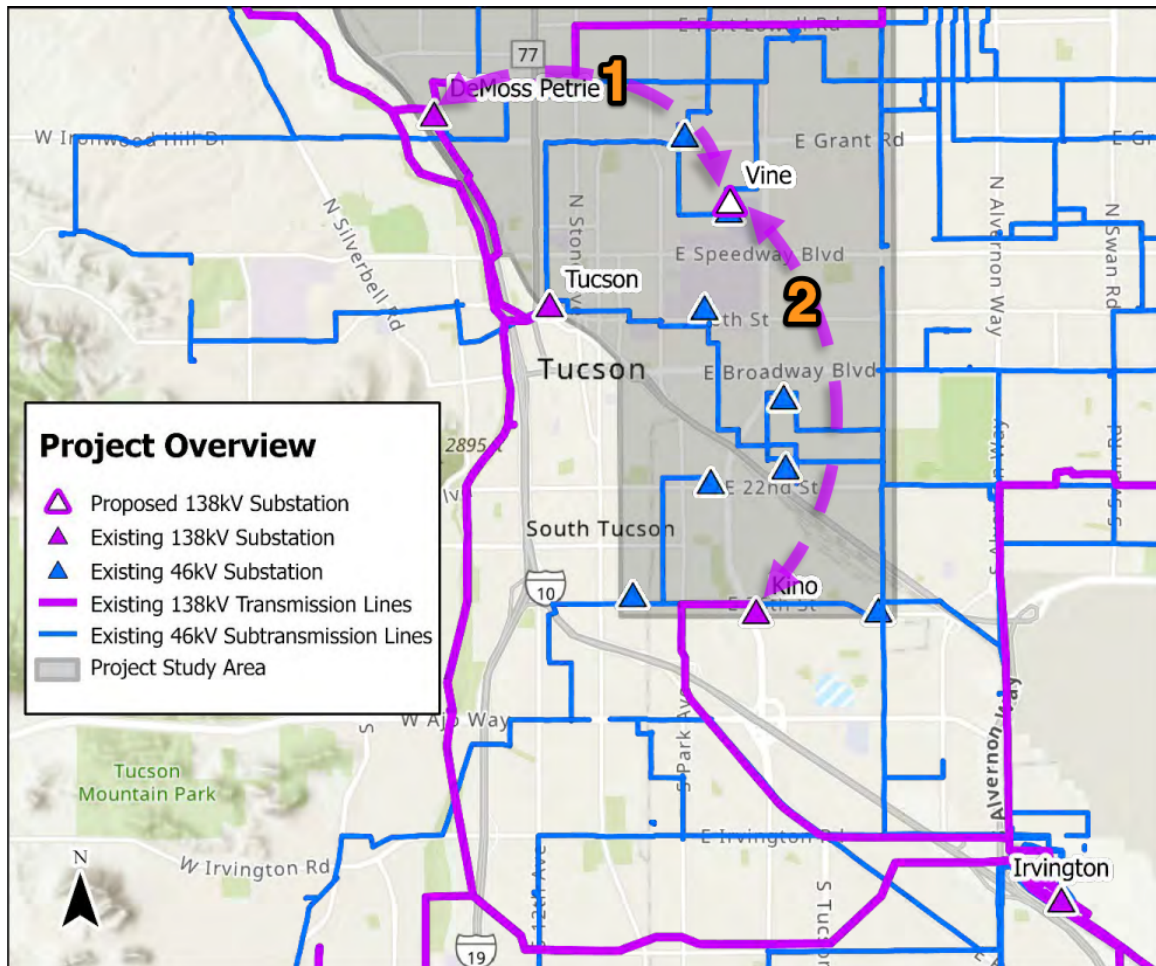
The Halfway Solution

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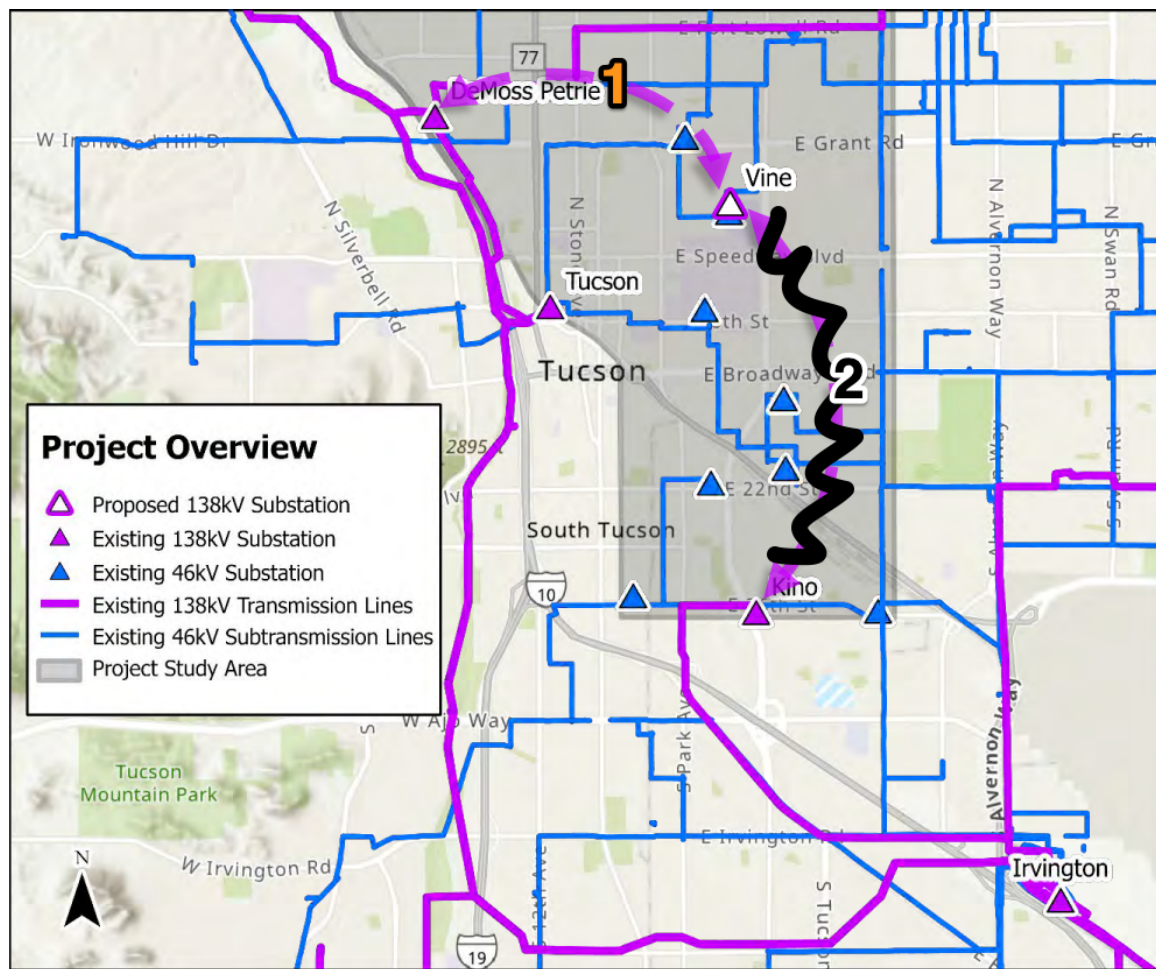
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I. TEP's Current Proposal



To keep it brief, TEP intends to build the new Vine substation and create an overhead 138 kV loop by connecting it to DeMoss Petrie (Connection 1) and to Kino (Connection 2). The purpose of the loop is to provide redundancy. Once the 138kV system is built, TEP claims that it will remove the 46kV substations and lines.

II. Our Proposal: the Halfway Solution



We propose that TEP only undertake the DeMoss Petrie to Vine section of the proposed project (Connection 1). The Vine to Kino section (Connection 2) is not required for any technical reason for the project to attain its principal goal to upgrade the delivery of electricity to the new Vine substation. Constructing Connection 2 overhead directly conflicts both legally and politically with longstanding local land use regulations, prized community goals, neighborhood interests, and the financial value of numerous private properties along the route. Given these many conflicts, for what might be a very marginal gain in redundancy *at best*, the expense to construct Connection 2 is a deal of highly questionable value for ratepayers' pocketbooks.

A. Technical Necessity

1. Upgrading the System. Connection 1 provides the 138kV upgrade (3x upgrade from 46kV to 138kV) for the Vine substation and the entire area that TEP desires. Connection 2 is unnecessary in achieving that goal.

2. Increased Reliability. Connection 1 will use steel poles that substantially increase reliability compared to the wooden poles of the existing 46kV system. As TEP has said, the steel poles in the 138kV system have not been felled by a storm or vehicular accident in the last decade, which is as far back as TEP looked. And, as TEP has said, the 138kV system "almost never" goes down while the 46kV system goes down every monsoon season. Thus, Connection 1 will bring a substantial increase in reliability compared to the status quo.

3. Unnecessary Redundancy. The redundancy provided by Connection 2 is of very slight additional value to the system's reliability, if that. For one thing, if Connection 1 is extremely unlikely to go down, as TEP has said, the need for redundancy is itself minimal, perhaps approaching zero. Secondly, if a catastrophe does occur of such great

magnitude that it is able to knock out parts of the 138kV system (i.e., beyond anything we have seen for at least the past decade), it will likely have also already knocked out large sections of the 4-14kV distribution system, causing widespread outages whether or not there is transmission-level redundancy.

4. Historical Background. For the past century, Tucson has not had redundancy in its substation connections. The system has historically been a radial, spoke and wheel system, with power flowing in one direction. The absence of redundancy has not proved to be an overriding problem to our lives or the City's development. As it concerns reliability, the design of the 138kV system already substantially improves upon the primary problems of felled wooden 46kV poles.

B. Conflicts with City Land Use Regulations

1. Precedent. Statutory and case law have established that utility projects subject to approval by the ACC must be in conformance with ordinances, regulations, and general plans of municipalities, including those requiring undergrounding.¹ Connection 2, in particular, comes into conflict with a number of these municipal regulations, which TEP is trying to legally overcome through costly and time-consuming litigation that runs against longstanding precedents. The Halfway Solution would enable TEP to avoid this effort and expense as well as the negative public image that the project, if constructed overhead against municipal regulations, will surely arouse.

2. Ordinances. Connection 2 covers an area subject to scenic and gateway ordinances that require the undergrounding of new transmission lines. Connection 2 also contains several areas subject to historic zoning ordinances that limit the types of structures that can be built. TEP is currently attempting to get around these ordinances on various technicalities, but its likelihood of success appears to be low.

3. Specific Plans. Portions of Connection 1 and Connection 2 are subject to "specific plans" (a legal term encompassing the City's area and neighborhood plans) that call for the undergrounding of new electrical infrastructure (Section 6, Policy 6 of the University Area Plan in this instance).² The Zoning Examiner already determined that the routes TEP originally proposed were not in conformance with the City's specific plans. In addition, the Mayor and Council unanimously directed the City Attorney to enforce compliance with the City's plans.³ The Vine substation as currently proposed will require a rezoning. Rezoning requires conformance with the undergrounding requirements of the University Area Plan.

C. Conclusion

The Halfway Solution provides a way for TEP to meet its major goal for the Kino to DeMoss Petrie project without any of the costly conflicts and negative effects the project would otherwise inflict on both TEP and the community. It is a win-win. Now, that's not to say that the remaining Connection 2 has no conflicts. A small portion of Connection 2 is also subject to the University Area Plan, which would require undergrounding transmission lines through the Jefferson Park neighborhood. However, TEP should be able to substitute the money it would save from not constructing Connection 1 to cover undergrounding the substantially smaller portion of Connection 2 (about one-half mile) that would be needed to be in full compliance with the City's land use regulations.

¹ A.R.S. 40-360.06(D). "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town."; *APS v. Town of Paradise Valley* (1980). The Arizona Supreme Court said (p 451), "[the existence of alternative funding mechanisms] does not prevent the Town from mandating the undergrounding at utility expense."; "...local governments can prescribe undergrounding within their boundaries."

² A.R.S. 9-461.08(B): "Specific Plans may ... include: (1) Regulations determining the location of buildings and other improvements with respect to existing rights-of-way, floodplains and public facilities. (2) Regulations of the use of land, buildings and structures, the height and bulk of buildings and structures and the open spaces around buildings and structures."

³ Mayor & Council Special Meeting September 1, 2021, Item 3. Bullet 2(a): "...The route's incompatibility with existing plans of the City..."; Bullet 3: "...the City's position is that this route – or any proposed preferred or alternate route – cannot be considered for approval unless TEP complies with all City requirements..."