

Kino to DMP 138kV Transmission Line Project Live Stream Open House Questions and Responses

#	Question	Response
1	Sorry to be skeptical, but it's a regular practice of corporations who want to get a project accomplished to contract with company to do studies who are willing to reach a conclusion to justify that project. You say there have been multiple studies which came to different conclusions. How independent are the companies which did those studies? Are they available on your website. And sorry, I find it difficult to compare Kingman and Tucson. Very different towns, especially with the location of this line.	The study referenced during the virtual open house was conducted by the U.S. Bureau of Land Management (BLM) as part of an environmental assessment (EA) of a 230 kilovolt transmission line in Mohave County. The EA section on property values includes references to dozens of studies and articles, describes it's analysis as "a fair assessment of the research on this subject." A link to this study can be found in our Aug. 13 Kino to DeMoss-Petrie virtual presentation on our project website. You can read the EA by visiting this website: https://eplanning.blm.gov/eplanning-ui/project/97103/510 .
2	Question: Has TEP ever commissioned a scientific study to measure the impact on property values when a 100' transmission line is built near a home? If so, can that study results be posted on your website. If not, why not?? Thanks.	<p>During the virtual presentation, we shared information about a recent study conducted by the U.S. Bureau of Land Management (BLM) as part of an environmental assessment (EA) of a 230 kilovolt transmission line in Mohave County. The EA section on property values includes references to dozens of studies and articles, describes it's analysis as "a fair assessment of the research on this subject." A link to this study can be found in our Aug. 13 Kino to DeMoss-Petrie virtual presentation on our project website. You can read the EA by visiting this website: https://eplanning.blm.gov/eplanning-ui/project/97103/510.</p> <p>We have additional links to property value studies here: https://www.tep.com/project-faqs/.</p> <p>TEP has not commissioned a study, we have relied on literature searches to determine common themes across many studies.</p>
3	If the line is built near my home and I can prove it negatively impacted my property values, will TEP compensate? Or is TEP somehow protected from any negative impacts on homeowners?	No, TEP would not provide compensation for a change in property value. Much like a road public improvement project, TEP provides infrastructure that provides service to the entire community.
4	Will these lines affect the cell services in the vicinity of the corridors where the lines will go	TEP does not anticipate that the proposed line will cause any negative impact to cellular service within the area. With approximately 2,500 circuit-miles of transmission lines, TEP has received no customer complaints about interference in cellular service caused by existing transmission lines. TEP is under the orders of the ACC to resolve any communication issues should complaints arise.
5	How do these size poles fair if they are hit by a large truck in some sort of a accident along ROW	Historically, these poles withstand impacts by vehicles at average speeds, and even above average speeds. They've been observed to sustain damage upon impact that may or may not require replacement of the pole. The severity of the damage depends upon type and speed of vehicle as well as direction of impact.
6	Have you lost any poles of this size to a microburst from a monsoon storm? Alice Roe Blenman Elm neighborhood	To date, TEP has only lost one weathering steel monopole due to microbursts.
7	What is the cost difference between what is proposed when compared to burying lines?	TEP hired a third-party consultant to study the cost of undergrounding in an urban environment specifically for this project. Results estimate that costs to install the line underground are approximately 11 times greater than installing the lines overhead. The study is posted on the project webpage at https://www.tep.com/wp-content/uploads/TEP-138-UG-Report-Rev.-0-signed.pdf .
8	We've been told that routing the lines underground is too expensive, yet this is done all the time in other cities. Has TEP actually done any studies to examine feasibility of routing underground?	TEP hired a third-party consultant to study the cost of undergrounding in an urban environment specifically for this project. Results estimate that costs to install the line underground are approximately 11 times greater than installing the lines overhead. The study is posted on the project webpage at https://www.tep.com/wp-content/uploads/TEP-138-UG-Report-Rev.-0-signed.pdf .
9	Where specifically in the middle of the city of Tucson do you have 85 foot poles?	A pole of comparable size is located on the north side of East Kleindale Road, just west of North Richey Boulevard.

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10	Tucson is a visually attractive city. Electrical towers will despoil any area they are constructed in. Farewell tourists! Instead of ruining the views and property values of mid-town neighborhoods, why not put the line directly down Cherry or Park, which is to say through the middle of campus? Alternatively, please bury them. Other cities routinely bury their electrical lines. You can, too. Thank you.	<p>North Cherry Avenue was considered as an alternative. However, existing utilities within the road right of way made construction of the line along Cherry impossible. This link was eliminated from consideration. Park Avenue was also looked at as a possible link but the City of Tucson Sunlink streetcar travels down North Park Avenue. The City of Tucson has informed TEP that it will not allow an outage of the streetcar to construct the transmission line. For this reason, Park south of East Speedway Boulevard has been eliminated from consideration.</p> <p>TEP typically installs transmission facilities above-ground, and requires the additional cost of installing facilities underground to be borne by those who request such installations. This practice avoids passing along unnecessary costs to customers through our rates. It also ensures that all of our customers are not asked to subsidize a discretionary expenditure that primarily benefits residents of one small area of our service territory.</p> <p>Arizona Legislature recognized the underground issue and created Arizona Revised Statute 48-620 as a means for residents to petition for the undergrounding of utilities. In previous TEP siting cases the concept of undergrounding has been raised but to-date the Arizona Corporation Commission has supported TEP's overhead transmission construction by way of approval of the permit required by TEP to build a transmission line.</p>
11	How many comment cards indicated that there are NO good locations for the project, and therefore it should not be built?	22
12	Is it possible to bury a portion and have a portion elevated? Or must the entire line be above / below ground?	A portion can be placed underground as well as overhead on the same circuit.
13	Does the study investigating property values include cases where high voltage lines go through the middle of neighborhoods?	One study in existing literature from 1998 looked at this, this study is from Canada. Also see response to Question 2 above.
14	Please comment on the feasibility of Aviation, and whether this route was considered.	Aviation Parkway was not considered. It was excluded from the evaluation because it is an ADOT controlled parkway. ADOT regulations do not allow for parallel facilities in their right-of-way. Furthermore, the Aviation Parkway would not meet the purpose of interconnecting the three substations as it mainly runs East-West, not North-South.
15	Could the street islands on North Campbell be used as a location for the 138 Kilovolt transmission line?	<p>TEP reached out to the City of Tucson Department of Transportation regarding this issue and there response is:</p> <p>The Department of Transportation and Mobility is generally not supportive of placing the large transmission poles within medians / islands. Primary concerns include traffic safety, maintenance, and conflicts with City initiatives.</p> <p>Large, fixed, unforgiving obstruction(s) in our medians have the potential to increase the severity of crashes in the median, compared to smaller poles and signs with breakaway bases. The larger poles in the median could cause sight distance obstructions.</p> <p>It is generally safer for maintenance workers to park vehicles and perform work outside of the roadway, rather than in and around the median. Running the lines through the median and across the middle of intersections has the potential to impact traffic in both directions, or even the whole intersection, when maintenance needs to occur.</p> <p>City of Tucson Complete Streets Guidelines will promote narrower medians that may not accommodate the large rigid poles, which would require clear zone or space behind the median curbs. City of Tucson promotes rainwater harvesting and native landscaping in medians. Water retention may be an issue with the pole foundations.</p>
16	No overhead lines in or adjacent to historic neighborhoods. The historic neighborhoods are not responsible for the increasing demand, don't you agree.	All neighborhoods within the study area have contributed to the overall load growth.
17	Are the historic neighborhoods responsible for the increased loads?	All neighborhoods within the study area have contributed to the overall load growth.
18	Has anyone reached out to Elon Musk's The Boring Company? They claim to be able to bore a 14ft diameter tunnel for less than \$2m a mile.	TEP is not pursuing underground installation and has had no contact with that company.

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19	So this project only benefits those in the direct vicinity? That seemed to be point the gentlemen on the right made with regard to an under grounding district?	The project provides benefits to all customers within the study area. By increasing electric capacity, TEP can avoid overload conditions that can damage equipment, causing outages or low voltage for homes and businesses. Some lower-voltage feeder lines in the study area have reached or are approaching their capacity limitations. With the new line, energy demand requirements placed on existing substations will be reduced. The planned UA North Substation will support a portion of those demands. This will allow for contingency support at both ends of the project as well as the eventual retirement of portions of the existing aging 46kV infrastructure.
20	Has solar not reduced demand in historic neighborhoods? We know many homes that have added solar in recent years.	Although rooftop solar arrays can help customers reduce their overall usage and monthly electric bills, peak solar production does not coincide with peak energy usage. TEP must maintain an energy grid that is prepared to meet customers' energy needs at any time of the day, including at night or during periods of intermittent solar production.
21	Could the lines go out to Campbell (east boundary of Jeff Park) then north to grant.	Yes, Route D follows this path.
22	How far apart can the poles be? How many poles in a mile? Could the lines go out to Campbell (east boundary of Jeff Park) then north to grant.	The distance between poles range between 600 feet and 1000 feet and the number of poles per mile is typically 5-9. These can vary though, dependent upon the need. The route mentioned is one alternative being presented for consideration.
23	The route to Campbell and Grant was not considered so these poles are much larger than the poles we see around banner health now? what issues did you have at the other locations you installed these lines?	The poles used for this project will range in height from approximately 75-ft above grade to 110-ft above grade. The height will be dependent upon clearance requirements from ground to wire. The poles will be larger than those installed around the hospital because the existing poles support a lower voltage line. Typical issues that arise during the installation of a line usually involve unforeseen existing infrastructure, such as fiber or old water and sewer lines that were not marked during the bluestake process.
24	Ed sounds like a link up and down Campbell and connecting to grant meets your needs. Falls in line with the grant road widening and keeps the very large poles out of neighborhoods.	These are routes under consideration.
25	so why we're signature pages only considered as one entry	Although letters from neighborhood associations were regarded as a single comment, individuals representing their neighborhoods also commented individually.
26	1) works from home and if there will be power outage during construction and for how long? 2) how does it vary on narrow streets? cant picture how they would go if would have to purchase land to some historic properties (scales for residential/historic homes)	There should be no intentional power outages during construction of the new line.
27	Are safety measures planned to protect residents living near the line in case of disasters like an earthquake, as the proposed routes are near underground gas lines. High voltage lines near gas pipes could cause an explosion. Sorry can't see any video.	The safety of the public and our employees is paramount, TEP continually evaluates safety concerns throughout the design and construction process. Studies required for gas lines are regulated by the Arizona Corporation Commission. For specific situations another requirement of the Arizona Corporation Commission will require TEP to perform a study on interactions with gas as part of engineering design of the approved route. The federal government conducted a study (FEMA-202, September 1990) to determine the impact that an earthquake would have on electric infrastructure, concluding that transmission lines are very minimally impacted by earthquakes. Roads within Pima County are designated utility corridors, which allows for multiple utilities within the road right of way. Tucson is also considered a low seismic activity 'zone 1' as defined by the uniform building code. This equates to a low level for the potential for structural damage.
28	Has the UA indicated a preferred route from their perspective ?	Not at this time.
29	What is the reasoning behind the new Helen Street route in the 800-900 block?	This link was added at the request of the University of Arizona, due to proximity of UA buildings along this area of Speedway.
30	Now that it has been added will there be time for further public feedback on it?	Yes, the Public comment period for this phase has been extended to September 20, 2020.
31	Who are the stakeholders you are working with at the University on this?	Many different UA departments are represented in the project.

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32	And how does a neighborhood group achieve stakeholders status to work with you in the same way?	Dozens of neighborhoods are actively engaged in the process as representative members of the Community Working Group, which has provided valuable input to TEP throughout the process.
33	It seems like the University has a special status as a stakeholder since they have been able to directly influence and change the routes that are being considered. Is that correct?	The placement of existing infrastructure and development plans of the multiple public entities including the UA can influence the route selection process. TEP also has reviewed routes proposed by members of the Community Working Group and the public. Those routes were researched in the same manner as those suggested by government, utility and agency stakeholders. However, those routes were either not constructible or did not meet the needs of the project.
34	Is there a community group you are working with already representing the Feldman's neighborhood?	Yes, Feldman's NA has a representative on the CWG.
35	What is the TEP process involving this stakeholder feedback that arrived at the addition of this route? Is it separate from the feedback process that we participated in tonight?	See Questions 31 & 32.
36	In the underground cost study, why do just the underground wires cost more than the entire project per mile above ground?	Underground conductors have a sophisticated design that dissipates heat and provides insulation, which increases costs.
37	I live in Sam Hughes. It is unclear to me if additional lines come into the neighborhoods from the transmission line?	No additional transmission lines will come into the Sam Hughes neighborhood as a part of this project.
38	Interesting you are going through historic neighborhoods on Euclid and Campbell so we are divided. Why aren't you looking at a route along I-10 along Grant Road???	A route along I-10 does not serve the purpose and need of the Project to connect the Kino Substation and the UA North substation, both of which are off of Kino/Campbell.
39	So where are you putting on Euclid?? How does that work?	No decision has been made as to whether the line would be on Euclid, or which side of road.
40	I would like a more civil discussion about this. I represent three neighborhoods as a resident and as a commercial entity who has enormous electric bills as well as transformers when other communities do not have that. (Phone number redacted). Please Call me.	TEP will contact this individual.
41	Who drives that process with the city?	Unable to respond. Unsure of what process they are referring to.
42	We have updated most of our TEP infrastructure and it is bigger which makes no sense as we look at all developing communities.	Infrastructure within the study area is aging and cannot support projected increases in energy demand. Some equipment currently providing service to area customers is nearing the end of its useful life and must be replaced within the next five years. TEP designs all of its equipment in accordance with the governing codes.
43	I am sad that TEP is not locally owned and doesn't care about our history any more.	TEP's headquarters, leadership and the majority of its employees are located right here in Tucson and do have a vested interest in the City. (Approximately 400 TEP employees at our Springerville Generating Station live in the White Mountains area.) We invite you visit our community investment page to learn how TEP supports education, environmental stewardship and our most vulnerable residents: struggling working families, seniors, persons with disabilities, teens and young children.
44	Regarding TEP Meeting August 13th at 6pm to discuss Kino to DeMoss Petrie Transmission Line: Do DOTTED LINES on the map on postcard mailed to city residents correspond with the ONLY possibilities for the new lines, or are other routes within the dark lines, "study area", being considered for the new lines?	Yes, the dotted lines are the only routes under consideration at this time.
45	Is the increase in energy demand related to the expansion of Banner Hospital? If so, will Banner provide funding to assist in placing the line portion underground through the neighborhood?	The increase in energy demand is not entirely related to the expansion of Banner hospital. This project benefits everyone within the study area. Existing circuits at both ends of the project will be serving reduced loads due to the planned UA north substation supporting those loads. This will allow for contingency support at both ends of the project. Existing aging, unreliable infrastructure within the study area will either be retired or be serving reduced loads thus reducing the strain placed on this equipment.
46	What criteria will be used for selection of the route? Will the fact that Jefferson Park is an Historical Neighborhood be a heavily weighted criterion? Will the view shed of Jefferson Park residents be strongly considered?	Multiple criteria will be used for selection of the route as indicated in our previous presentations. Yes, both of these criteria are weighted higher in the final analysis, for any neighborhood they are applicable to.

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47	Why doesn't TEP propose an underground line through the neighborhood as the preferred alternative? What NEPA studies has TEP conducted for these alternatives? At what point will the public be able to comment on the NEPA studies?	<p>TEP typically installs transmission facilities above-ground, and requires the additional cost of installing facilities underground to be borne by those who request such installations. This practice avoids passing along unnecessary costs to customers through our rates. It also ensures that all of our customers are not asked to subsidize a discretionary expenditure that primarily benefits residents of one small area of our service territory. The Arizona Corporation Commission (ACC) has supported this practice by approving rules that allow for recovery of costs from those who request underground facilities.</p> <p>The environmental analysis is conducted under Arizona Corporation Commission rules. TEP must obtain a Certificate of Environmental Compatibility from the Arizona Corporation Commission. NEPA is not required, as there is no Federal Nexus that triggers NEPA.</p>
48	If TEP is looking to increasing renewable energy to address energy needs, why did TEP lobby the ACC to eliminate net metering for solar systems?	<p>Rooftop solar systems alone are insufficient to meet our entire community's energy needs. We're planning to provide more than 70 percent of our power from wind and solar resources as part of a cleaner energy portfolio that will reduce carbon emissions 80 percent by 2035.</p> <p>Customers who file a request to interconnect new solar power systems to TEP's energy grid are still eligible for significant bill savings under new ACC-approved compensation for excess solar energy. This allows TEP to keep electric service affordable for all customers. Under previous rules, users of private solar power systems pay only a small fraction of the cost TEP incurs to provide their service. That means other customers must pay higher rates to cover those unpaid costs.</p>
49	Your maps and videos are very helpful. I have a question for Renee, is this analysis the same as what you did for the Irvington power plant to the new Keno substation?	Yes, very similar. Some of the criteria are slightly different, but the overall process is the same.
50	Where in Tucson can we see an example of the lines at issue? Thanks.	TEP's most recently constructed transmission line is located along Benson Highway, west of Country Club, heading north to Park Avenue, then north on Park to East 36th Street. At 36th, head east to the new Kino 138kV substation.
51	What percentage of the load actually is being caused by UA and Banner expansion versus the 'neighborhood' specifically	Please see the attached maps. These maps show the current energy demand at each substation and how the energy demand served from each substation will change with this project.
52	Why not segment 1,2,3,9,16,17,36,35,34,31,28,27,29,30,39,47,83,85,,87,99,108,119,120. It seems this is designed to serve UA and Banner it should run through UA on large streets.	This project serves everyone in the study area. Many of the suggested segments have been removed and/or were not used in forming routes, either because they were not constructible, or they were not needed in formation of the routes that were developed.
53	If power lines are put down Euclid, how many house and sidewalks will be destroyed?	There is no intent to directly impact homes. In the event sidewalks are impacted, TEP is required by the City to restore sidewalks to ADA compliance. In some areas of the project, this could require that TEP obtain easements for the sidewalks from private landowners, in order to fit the poles in road right-of-way.
54	Does anyone in the decision making process at tep live in near the proposed lines?	Yes
55	How have the plans changed since receiving public input?	TEP is still in the planning and analysis phase of the project, over the course of the project links have been removed and added, routes have also been removed and added. No decisions have been made that this time.
56	Have alternate routes that don't impact historic neighborhoods been considered?	Historic neighborhoods occupy a continuous band from Broadway to Speedway that must be crossed in order to interconnect substations. Circumventing this band would add a significant number of miles to the route, increase costs, and result in impacts for additional neighborhoods outside of the study area.
57	How frequently do underground wires need to be repaired compared to above ground wires? Is this factored into cost comparisons? 2) Can underground wires share costs with other utilities?	TEP does not have experience with underground transmission lines as it is historically an overhead transmission company therefore it does not have historic data to compare overhead installations to underground installations. However, our research indicates that the cost for maintaining underground lines would be higher.

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58	Can you eliminate one of the two connections to the new station? Was is the need to connect from both directions? While destroying historic neighborhoods?	TEP cannot eliminate one of the two connections to the planned UA North substation as this would eliminate the redundancy we will be achieving for reliability purposes. By connecting the Kino Substation to the DeMoss-Petrie Substation, TEP would have the ability to deliver energy to customers throughout the area from more than one direction.
59	Will tep reimburse home owners whose property values drop from the intrusion of these lines?	Please see Question #3.
60	Where are some similar giant transmission lines like these proposed already? Where does these currently exist?	TEP's most recently constructed transmission line, which includes poles ranging in height between 75-110 feet tall, is located along Benson Highway, west of Country Club, heading north to Park Avenue, then north on Park to East 36th Street. At 36th, head east to the new Kino 138kV substation.
61	Are comments from neighborhood associations weighted more than comments from individuals?	No
62	Just because you want a loop doesn't mean it is necessary. Seems like it would be more cost effective and less controversial to just have the "cul de sac" approach.	The "loop" would provide TEP with the ability to serve energy needs from more than one direction. This should help to reduce the frequency and duration of service outages for all customers throughout the area and also allows TEP to meet federal and state reliability criteria.
63	How has iron horse not been invited to the community working groups?	Iron Horse Neighborhood Association was invited in Fall 2019 to participate. Apparently contact information had not been updated with/by the City of Tucson. This issue has been corrected.
64	Summary of route scores does not seem to include any measure of public comments. How are they factored in to route scores?	Public comments are used qualitatively to help weight the importance of multiple factors considered during the line siting process. In addition to public comments, TEP considers planned land use, adjacent historic properties and districts, view shed and many other factors.
65	Why can't route D be combined with routes 1&2?	Under our current design and reliability standards, the line cannot enter and exit the UA North Substation on the same set of poles.
66	Why, if this is for Banner and UA, isn't the route going through the streets on these properties?	The project would provide reliability benefits for all customers throughout the study area.
67	Why are you looking at anything other than Speedway to Campbell - route C1/2. These are the clear arterial streets. Thanks!	TEP is required to look at many alternatives and identify the environmental impacts in its application to the Arizona Corporation Commission.
68	Why can't you use D with lines 1/2 on either side of the ring road? They would be far enough apart and not on the same structure.	Given the existing utilities in the right-of-way, there is not sufficient room to place two additional transmission lines within this right-of-way.
69	The existing 138 kV line already goes up to Demoss Petrie, so why not follow it up to approximately downtown, then east to UA?	Multiple circuits already occupy those lines. Restrictions on use of ADOT's or the Union Pacific's right of way prohibit us from installation along that route. There is insufficient room to install another line given current restrictions.
70	Is this meeting on video or only by audio. I was under the impression this would be with video. I.e. zoom or ?	Participation was available during the meeting via both video and audio. A recording of the event is available on our project website.
71	Isn't population growth happening East of the city? Why is the substation being built in a historic area vs further East in non historic areas	The project need is not only the result of population growth, but also increases in energy demand within the study area and the need to replace aging infrastructure.
72	Your reports say that the poles can "if needed be taller than 100". No guarantees how many taller and how many poles	Pole height is a dependent on the distance between poles and the clearance required from ground to wires. TEP starts with a 74.5' height above grade and then will increase the height of the structures if needed to maintain those required clearances. Steel monopoles 110' or higher are not typical of the 138kV system.
73	Why isn't the "UA" substation be built on UA land.?	The UA North Substation is a TEP substation, not a UA-owned substation. It will serve all within the study area, not just the UA. TEP purchased the land for the planned UA North substation from UA.
74	Rather than running lines through residential or Historic areas why not run the lines in commercial areas such as Speedway which also runs alongside UA. This would keep the lines away from historic areas.	Speedway is in part considered in some of the routes.

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75	What are the streets on the proposed route N Of 22nd then West of Campbell to Euclid on to N of Speedway? This looks like it runs thru Barrio San Antonio and Miles neighborhoods and other densely populated areas N of Broadway. I personally oppose this route.	TEP needs to look at multiple alternatives. This is an alternative to Campbell Ave.
76	Must there be an underground corridor or can TEP elect to spread the cost fairly among the community since it benefits the whole community and TEP refuses to compensate affected homeowners?	TEP typically installs transmission facilities above-ground, and requires the additional cost of installing facilities underground to be borne by those who request such installations. This practice avoids passing along unnecessary costs to customers through our rates. It also ensures that all of our customers are not asked to subsidize a discretionary expenditure that primarily benefits residents of one small area of our service territory.
77	If a property appraisal indicates that the line directly adjacent to my house will decrease my property values, will TEP make up the difference?	See Question #3.
78	Public comments submitted to TEP are overwhelming negative re: the line coming thru Jefferson Park. The routes thru this neighborhood still remain as top priorities. Please let us know why these comments seem to be ignored. Have your decisions already been made?	No decisions have been made. All comments are being considered. No routes have been removed at this time.
79	What about undergrounding the line from the UofA substation up to Grant, just five blocks, not a mile and a half?	TEP typically installs transmission facilities above-ground, and requires the additional cost of installing facilities underground to be borne by those who request such installations. This practice avoids passing along unnecessary costs to customers through our rates. It also ensures that all of our customers are not asked to subsidize a discretionary expenditure that primarily benefits residents of one small area of our service territory.
80	My House is on Vine, one of the four routes. Vine is not 100' wide. Please explain what "a 100' ROW" means.	A 100-foot right-of-way is obtained when TEP is not in a road or existing right-of-way and crossing undeveloped areas. That is why it states "up to".
81	What does "acquire easements as necessary" mean, if the ROW isn't wide enough?	Obtain an easement from a private land owner for either placement of the transmission line, aerial crossing (no pole- only wires), or to move other utilities or sidewalks out of road right-of-way.
82	Regarding the "underground" study, it isn't convincing. It's a small-scale study based on generic costs and lacking references. The engineering manager doesn't seem to have been a PE. Furthermore, the factor of 11 needs to be placed in the context of an overall cost-benefit analysis.	The study was prepared by a registered professional engineer with experience in underground line installations.
83	Has there been a risk assessment regarding the possibility of an earthquake that may be caused by the Santa Rita fault zone relatively close to Tucson, if not, why not? if so, what are the results of the risk assessment?	TEP has performed no risk assessment regarding the possibility of an earthquake caused by the Santa Rita fault zone. A risk assessment regarding earthquakes is not part of the CEC requirements.
84	It seems the residential streets you've identified go through my neighborhood, Miles and Barrio San Antonio, neighborhoods that both have a much higher percentage of people of color. It also appears to significantly impact the Arroyo Chico neighborhood green space. Can you please speak to how you are addressing environmental justice? And neighborhood values?	TEP invites and values input from all neighborhoods within the project study area. Our goal is to build a more reliable energy grid that will provide service to customers throughout the area. Once the line is complete, it will help deliver service from an increasingly cleaner portfolio of energy resources, including new wind and solar systems.
85	Hi there, I sent this question at the beginning of the meeting and yet it was never answered, even though the presenters paused several times saying there are no more questions at this time. Why was my question not addressed? Thanks!	Thank you for your submission. TEP received more than 100 questions and comments during the live event. It would have been impossible for presenters to answer questions continually and still provide prepared project information, so live responses were provided only at intervals during the broadcast.
86	You stated that future solar in Tucson would require this improvement in infrastructure, why must it be in the center of town????	Transmission lines like this one are needed to transmit clean energy from large, community scale wind and solar systems to customers who live and work in the study area. Current infrastructure cannot support the increase in energy demand.
87	Did I hear correctly that a few stake holders made requests and they were granted as far as proposed links? How come Sam Hughes and others stakeholders made suggestions but they weren't accepted?	See Question #33.

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88	Is Kingman, AZ comparable in population, cost of living etc., to Tucson?	No, the referenced property value study was conducted for a UNSE project located in Kingman, AZ, but the study was not on property values in Kingman, AZ. It was a literature research of many previous studies from across the country and Canada.
89	If the transmission lines are aligned along Vine or any other very narrow residential street, how will that accommodate the oversized poles? Will the street be closed to accommodate them?	No streets would be permanently closed as a result of the project.
90	Why was it decided to site the ua substation near umc in a residential area near sick people with greater sensitivity?	UA North Substation was sited as close the load center as possible on land that was available and large enough for the substation. It is also in an area that has two other substations and Banner's industrial storage areas. It is not adjacent to the hospital. It is over 800 feet from Banner-UMC.
91	What specific QOL (quality of life) indexes are used in your analysis for impacted neighborhoods/residences? And how are they weighted against economic variables? How is Tucson High scored in your analysis? What QOL (quality of life) indexes are used in your analysis for impacted neighborhoods/residences?	TEP does not use QOL indexes. We use geospatial analysis and multi-objective decision models. Tucson High is a sensitive receptor and is weighted in the highest constraint category. Cost is ranked in the lowest constraint category.
92	How many ratepayers are in Tucson? Is the cost cited for the whole line or per mile? If the cost of 1-2 miles of under grounding was spread over everyone, weighted toward big consumers, it wouldn't be that much. As it is, we all bear the costs of many TEP improvements that are not just for us, but for the University for instance. I would gladly participate in sharing costs that help the whole city be a better place.	TEP has approximately 430,000 customers. TEP typically installs transmission facilities above-ground, and requires the additional cost of installing facilities underground to be borne by those who request such installations. This practice avoids passing along unnecessary costs to customers through our rates. It also ensures that all of our customers are not asked to subsidize a discretionary expenditure that primarily benefits residents of one small area of our service territory.
93	Will the transmission lines hum?	The transmission lines may hum, especially during rainy weather. If it becomes persistent and TEP is notified, TEP will locate the source and correct as necessary.
94	those poles in the alley would be dangerous, wouldn't want those in my alley! How many trees will be cut?	The number of trees to be trimmed cannot be determined until final design.
95	There have been many studies quantifying the decrease in property values of residences adjacent or near high voltage power lines. These provide data which permits the impact on residences along the route to be estimated. Were estimates of the loss of property values along the routes under consideration included in the cost studies?	See Questions #2.
96	On what date in time did TEP become aware or establish that in needed to plan ahead for greater energy demands in this area of Tucson?	TEP is required to ensure that it's system is designed to meet the North American Electric Reliability Corporation (NERC) standards so it is continually studies its transmission system to ensure that it can remain compliant with those standards and continue to provide safe, reliable and affordable power.
97	Will this project impact my neighborhood of Coronado Heights in any way. Coronado Heights is bordered on its south side by Glenn St. Glenn St. has existing power poles. 1. How tall are these? 2. Will these be affected in any way by your project?	No routes are proposed north of Grant Road.
98	It is possible some of your plans may impact "Thrive in the 05", "Move Tucson", and/or "Bus Rapid Transit Corridor" projects. Have you had conversations about this?	TEP is aware of these projects and has had conversations with the City and specific project "owners". These projects will be considered in determining which routes to move forward with in the application.
99	HEALTH POSSIBILITIES, CANCER CAUSING DUE TO OVERHEAD LINES, SHE LIVED IN MISSOURI AND BACK IN 1970S CAUSED CANCER. ASKING FOR LOCATION OF LINES. HAS PROPERTY IN 6TH IN EUCLID.	For more than 30 years, scientists and researchers from universities, national laboratories, health agencies, the World Health Organization and other groups have conducted research activities into possible health effects of EMFs. According to this large body of research, there are no confirmed health risks caused by exposure to low-level EMFs. No routes have been determined to this point, they are all preliminary.
100	You explained that the impact studies on property value could only be done after the fact. What average decline in values were shown in the studies that have been done?	10% or less.
101	There is an existing gas line supplying next to Banner, is there sufficient capacity in gas line to supply to build 2nd gas electric generator?	This would be dependent upon the size of generator being used to support the energy demand. A second generator would still not meet the need of the project by serving the energy demand within the study area and providing redundancy without the addition of a transmission line to deliver the energy and connect the existing Kino and planned UA North substation into the existing 138kV transmission system.

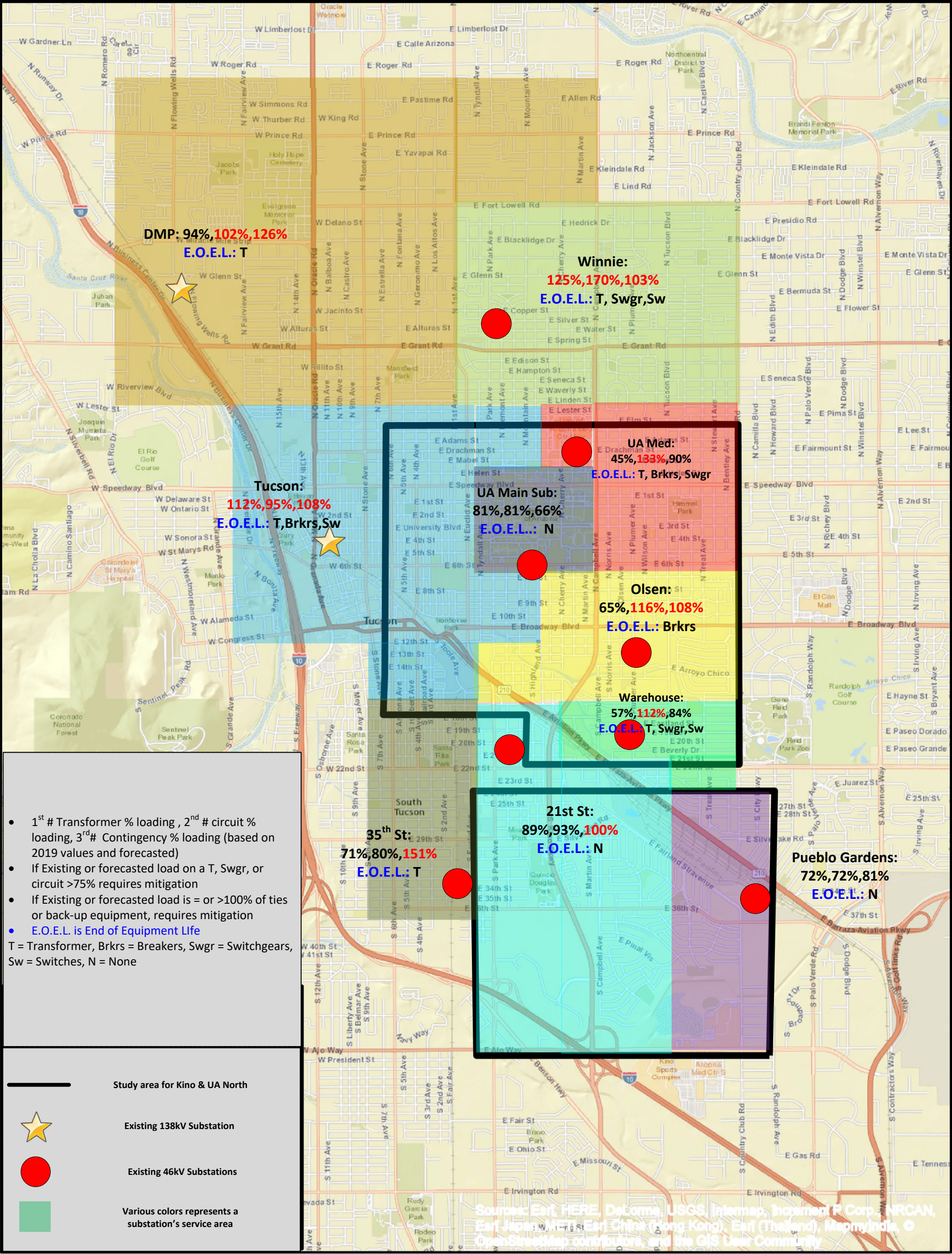
Kino to DMP 138kV Transmission Line Project Live Stream Open House Questions and Responses

#	Question	Response
102	Did you consider building a gas turbine generator to provide power?	TEP has looked at many different generation resources to meet energy needs including gas turbines however due to the newly proposed integrated resource plan which we are required to file, TEP is aiming to move away from typical generation resources and move towards more renewable resources. Even with these generation resources, this project would still be required to bring the power to the substations that serve the area as well as provide the redundancy by looping the substations in to the existing system.
103	there has been some talk about sidewalk in example on vine St..[this street is too narrow to allow room for sidewalk and street] will this street be closed permanently if they decide to put a sidewalk there?	No streets would be permanently closed as a result of the project.
104	Why is Vine even considered for this project. Historically neighborhood, narrow street, water catchments and plants have been placed to enhance the area. This destroys the feel of Jefferson Park. Would any of you want these towers next to your house?	It is the most direct path from the UA North to DMP substation, therefore it is considered a viable route from a constructability standpoint. All other factors have yet to be completely analyzed that will determine if it is a good route from the perspective of other criteria considered.
105	WILL THERE BE ANOTHER MEETING WITH FINAL DECISIONS.	There will be another meeting that shares the routes that will be included in the CEC application.
106	HELEN AN PARK, BROTHER HAS HOME IN 900 E HELEN. WANTS TO KNOW IF THIS IS A POSSIBLE TRANSMISSION ROUTE. WHO ARE THE STAKEHOLDERS THAT HAD AN IDEA TO RUN TRANSMISSION LINES THRU HISTORIC RESIDENTIAL NEIGHBORHOOD.... WHAT IS THE PROCESS THAT CAME TO THAT CONCLUSION. IF THEY GO THRU THE CONSTRUCTION AND LOSS OF BUS DUE TO IT, WILL I BE COMPENSATED IN ANY WAY?	See Question #57. There will not be a loss of bus service due to any route under consideration.
107	First thing I feel the residence of the city of Tucson is being steam rolled by tep into expepting that is totally incompatible with residences and small business parts of Tucson, in which is industrial scale power pole and lines. Also we need to step back and slow this process now partly due to the covid pandemic and to gather more information and public input from the affected residence in Tucson. There is no reason to rush this thru and ram it down peoples through, the entities that chose to build and require additional power than is already available are the ones that who must pay for any rate increases including for the cost of barring power lines.	<p>Public outreach and comments from neighbors remains an important part of this process, even during the pandemic. That's why TEP notified more than 40,000 recipients about the virtual public meeting.</p> <p>TEP's timeline for the project is designed to prevent anticipated reliability issues for customers in area neighborhoods. A large transformer, electric switchgear and other substation equipment currently providing service to some area customers are nearing the end of their useful lives and must be replaced within the next five years. Some lower-voltage feeder lines in the study area have reached or are approaching their capacity limitations.</p> <p>TEP typically installs transmission facilities above-ground, and requires the additional cost of installing facilities underground to be borne by those who request such installations. This practice avoids passing along unnecessary costs to customers through our rates. It also ensures that all of our customers are not asked to subsidize a discretionary expenditure that primarily benefits residents of one small area of our service territory. The Arizona Corporation Commission (ACC) has supported this practice by approving rules that allow for recovery of costs from those who request underground facilities.</p>
108	We need to consider localized power generation alternatives including solar, wind, and small natural gas power generators. these localized power sources would eliminate the need for industrial scale mega power poles running thru residential, university and small business neighborhoods.	TEP has considered many different generation resources to meet energy needs. Available land in the study area is insufficient to support large community-scale wind or solar systems. Even with local generating resources, this project would still be required to transmit and distribute energy to customers in the area.
109	Are comments from neighborhood associations weighted more than comments from individuals?	No. All comments are weighted equally – and sincerely appreciated.
110	What about undergrounding the line from the UofA substation up to Grant, just five blocks, not a mile and a half?	TEP is historically an above ground transmission company and will be pursuing the above ground option for this project. If the public wishes to form an undergrounding district, there are methods in place to do so and TEP is willing to assist in the development of the district.

Kino to DeMoss-Petrie 138 Kilovolt (kV) Transmission Line Project



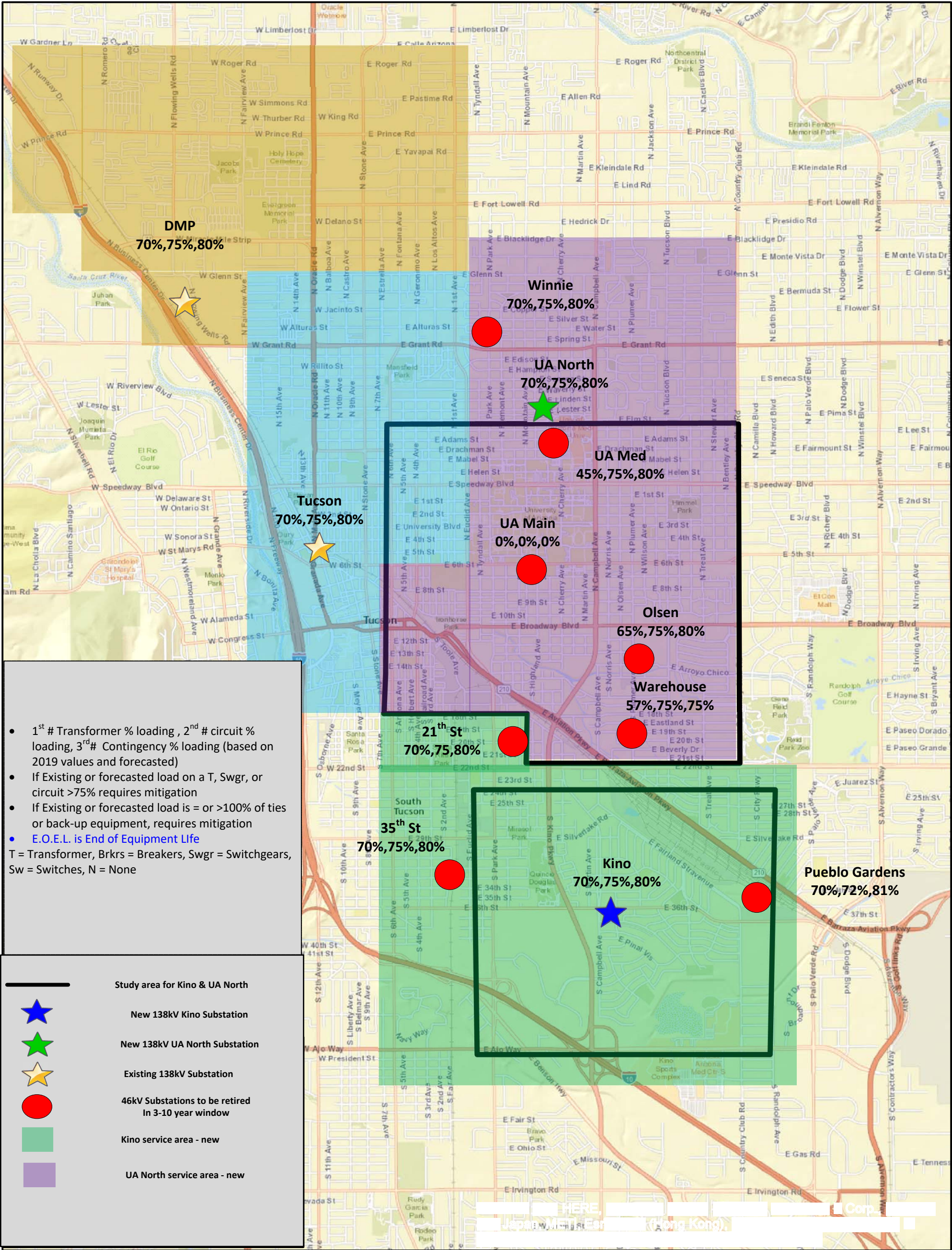
Existing Loading & Service Areas



Kino to DeMoss-Petrie 138 Kilovolt (kV) Transmission Line Project



Future Loading & Service Areas



- 1st # Transformer % loading, 2nd # circuit % loading, 3rd # Contingency % loading (based on 2019 values and forecasted)
 - If Existing or forecasted load on a T, Swgr, or circuit >75% requires mitigation
 - If Existing or forecasted load is = or >100% of ties or back-up equipment, requires mitigation
 - E.O.E.L. is End of Equipment Life
- T = Transformer, Brkrs = Breakers, Swgr = Switchgears, Sw = Switches, N = None

- Study area for Kino & UA North
- New 138kV Kino Substation
 - New 138kV UA North Substation
 - Existing 138kV Substation
 - 46kV Substations to be retired In 3-10 year window
 - Kino service area - new
 - UA North service area - new