

1 BEFORE THE ARIZONA POWER PLANT AND
2 TRANSMISSION LINE SITING COMMITTEE

3 IN THE MATTER OF THE APPLICATION) DOCKET NO.
4 OF ARIZONA PUBLIC SERVICE) L-00000D-21-0292-00193
5 COMPANY, IN CONFORMANCE WITH THE)
6 REQUIREMENTS OF ARIZONA REVISED)
7 STATUTES 40-360, ET SEQ., FOR A) LS CASE NO. 193
8 CERTIFICATE OF ENVIRONMENTAL)
9 COMPATIBILITY FOR THE THREE)
10 RIVERS 230 KILOVOLT TRANSMISSION)
11 LINE PROJECT, WHICH AUTHORIZES)
12 THE CONSTRUCTION OF TWO NEW)
13 SINGLE CIRCUIT 230 KV)
14 TRANSMISSION LINES WITH THE)
15 INTERCONNECTIONS ORIGINATING AT)
16 THE EXISTING APS RUDD-WHITE)
17 TANKS 230 KV TRANSMISSION LINE)
18 AND THE LINES PROCEEDING WEST)
19 AND CONTINUING SOUTH TERMINATING)
20 AT THE TS16 SUBSTATION, SOUTH)
21 HALF OF THE NE QUARTER OF)
22 SECTION 8 OF TOWNSHIP 1 NORTH,)
23 RANGE 1 WEST AND NORTH HALF OF)
24 THE SE QUARTER OF SECTION 8,)
25 LOCATED IN GOODYEAR, MARICOPA)
COUNTY, ARIZONA)

16 At: Goodyear, Arizona
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1 BE IT REMEMBERED that the above-entitled and
2 numbered matter came on regularly to be heard before the
3 Arizona Power Plant and Transmission Line Siting
4 Committee at the Hampton Inn & Suites, 2000 North
5 Litchfield Road, Goodyear, Arizona, commencing at
6 1:07 p.m. on the 4th day of October, 2021.

7

8 BEFORE: PAUL A. KATZ, Chairman

9 ZACHARY BRANUM, Arizona Corporation Commission
(via videoconference)
10 LEONARD DRAGO, Department of Environmental Quality
JOHN RIGGINS, Arizona Department of Water Resources
11 (via videoconference)
JAMES PALMER, Agriculture Interests
12 MARY HAMWAY, Incorporated Cities and Towns
RICK GRINNELL, Counties
13 (via videoconference)
KARL GENTLES, General Public
14 JACK HAENICHEN, General Public
MARGARET "TOBY" LITTLE, PE, General Public
15 (via videoconference)

16

17 APPEARANCES:

18 For the Applicant:

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1 CHMN. KATZ: Good afternoon, everyone. My name
2 is Paul Katz, and I'm the new Line Siting Committee
3 Chairman.

4 This is my first opportunity to meet with you.
5 I met some of you a couple of hearings ago when I was a
6 spectator, and I hope things will run smoothly. My
7 biggest concern is not knowing everyone's names. So
8 maybe the first time that you have a question or
9 whatever, you'll just identify yourselves by name.

10 And this is the time that we have set for
11 hearing CEC Case No. 193 in the matter of the application
12 of Arizona Public Service Company in conformance with the
13 requirements of the revised statutes seeking a
14 Certificate of Environmental Compatibility in the Three
15 Rivers 230kV Transmission Line Project.

16 And I just have a few things I want to go
17 through, but the meeting is called to order.

18 Are there any preliminary matters or questions
19 anyone has before we get going?

20 (No response.)

21 CHMN. KATZ: Hearing silence, I will next do
22 the roll call. And we can start to my far right. I
23 think that is Jack over three.

24 MEMBER PALMER: Jim.

25 CHMN. KATZ: But I would ask you to just come

1 down this row and identify yourself for the record.

2 MEMBER PALMER: Thank you, Mr. Chairman.

3 Jim Palmer, and I represent Agriculture.

4 MEMBER HAENICHEN: Jack Haenichen representing
5 the Public.

6 MEMBER HAMWAY: Mary Hamway representing Cities
7 and Towns.

8 MEMBER DRAGO: Len Drago representing the
9 Arizona Department of Environmental Quality.

10 CHMN. KATZ: And I would ask those folks who
11 are appearing virtually, if they would, to identify
12 themselves for our record as well.

13 MEMBER LITTLE: Toby Little representing the
14 Public.

15 CHMN. KATZ: And before anybody else says
16 anything, Ms. Little is our newest memeber. And I think
17 this is her first go-around, unless she's been on this
18 Committee previously, as is mine. So don't hesitate to
19 ask questions, and I won't be bashful in asking other
20 Members of the Committee questions or for assistance.

21 Anyway, I'll have our other remaining Members
22 who are appearing virtually to identify themselves.

23 MEMBER BRANUM: Zachary Branum with the Arizona
24 Corporation Commission.

25 Thank you.

1 MEMBER GRINNELL: Rick Grinnell representing
2 the Counties.

3 CHMN. KATZ: And is that it?

4 MEMBER RIGGINS: Thank you, Mr. Chair.
5 John Riggins representing the Arizona
6 Department of Water Resources.

7 (Member Karl Gentles joined the hearing at the
8 hearing location following the roll call.)

9 CHMN. KATZ: Thank you.

10 We are going to take a break at approximately
11 90 minutes. And if I lose track of time, I would ask
12 Carolyn Sullivan, our court reporter, to throw something
13 at me because we want to save her hands to make sure we
14 get a good record, and also we want to make sure we don't
15 cause any harm to any of you by not taking an adequate
16 restroom break.

17 And I would ask that the attorneys who are
18 appearing on behalf of the applicant, if they would, to
19 kindly identify themselves for the record.

20 MS. BENALLY: Good afternoon, Mr. Chairman,
21 Committee Members. Linda Benally representing Arizona
22 Public Service Company.

23 MR. DERSTINE: Matt Derstine, Snell & Wilmer,
24 representing Arizona Public Service Company.

25 CHMN. KATZ: And it's my understanding that we

1 are likely going to be going from today's date,
2 October 4th, through the 7th or 8th. Hopefully, we'll be
3 done by Wednesday or Thursday of this week and won't need
4 any more time than that.

5 Is that, essentially, a correct understanding,
6 Mr. Derstine?

7 MR. DERSTINE: I think that's correct.

8 CHMN. KATZ: And it's also my understanding
9 that we're not going to have an actual tour of the site,
10 but we're going to have a flyover or a virtual tour; is
11 that correct?

12 MR. DERSTINE: Yes.

13 CHMN. KATZ: And I don't know if there are any
14 members of the public in this room or watching these
15 proceedings virtually, but during the course of the
16 actual hearing, we should not have any interruptions by
17 members of the public.

18 At 5:30 this evening, we'll have an opportunity
19 to take public comment, and there will be sign-up sheets
20 if you're appearing here in person. And if not, we'll
21 determine who's present at 5:30 this evening. And that's
22 just an opportunity for members of the public to voice
23 any of their support or concerns about this project.
24 It's not an opportunity to interact with myself or any of
25 the lawyers or any of the Members of this Committee.

1 I also would like to advise any members of the
2 public that you're not to privately confer with any
3 Members of this Committee until a decision is reached,
4 and the Committee is well aware of their obligations or
5 should be, but they're not to be discussing this matter
6 with any member of the public or even with each other
7 until we sit down for deliberations.

8 It's also my understanding that there's no
9 pending Motion to Intervene and that we're not expecting
10 anybody to intervene. Is that correct, Counsel?

11 MR. DERSTINE: Yes, Mr. Chairman.

12 CHMN. KATZ: And are there any legal matters
13 that we need to resolve before beginning here today?

14 MR. DERSTINE: No.

15 CHMN. KATZ: And I would just ask counsel, do
16 you want to just make your opening remarks before we
17 identify your witnesses, or should we call them and swear
18 them in at this time?

19 MR. DERSTINE: I think we'll do our opening,
20 and then Ms. Benally will introduce our witness panel,
21 the three APS witnesses.

22 CHMN. KATZ: That would be fine.

23 MR. DERSTINE: Thank you.

24 Good afternoon, Chairman Katz, Members of the
25 Committee. This is the Three Rivers 230kV Transmission

1 Line Project.

2 When I first heard the name of the project,
3 frankly, I was a bit confused. We live in the desert,
4 after all, and I wasn't aware of any rivers in this
5 vicinity. I didn't know if maybe someone had just picked
6 the name, or maybe there was a Pittsburgh Steelers fan
7 who was making a shout-out to the Three Rivers Stadium in
8 Pittsburgh. I just didn't get the name.

9 But as I dug into the name of it more, I was
10 able to learn a bit about Arizona history and geography.
11 There are three rivers that are in the vicinity of the
12 project.

13 And, Jason, if you can pull up that map for me
14 on the opposite screen, whichever is opposite. Great.

15 There are three rivers. They are the Agua
16 Fria, the Salt River, and the Pima. And those three
17 rivers play an important role in the history of certainly
18 the Phoenix Basin but as well as the state of Arizona.

19 The first folks who settled in this area were
20 the Hohokam, and that took place somewhere around 300 AD.
21 And they were drawn to this basin, the Phoenix Basin,
22 because of the rivers that were here. And they developed
23 a very extensive canal system. They used these canals
24 pulling water from the Salt River to irrigate over a
25 thousand acres of land, and they grew extensive crops in

1 this area.

2 Those rivers, those three rivers, also fed a
3 vast system of wetlands, marsh, and mesquite bosque that
4 were all here within this area during that timeframe.

5 The Hohokam disappeared somewhere around 1500.
6 It's not clear what prompted them to leave. I think the
7 speculation is that there was an extensive long-term
8 drought. But the Hohokam were followed by settlers who
9 came to the Phoenix Basin in the 1800s. And they were
10 drawn here for the same reason that the Hohokam were
11 drawn here. There was extensive water in this area from
12 those three rivers that could be used to irrigate
13 farmlands. And the early settlers who came to the
14 Phoenix Basin used the same -- in many ways, the same
15 canal system, unearthed and dug out the canals that were
16 used by the Hohokam a long time ago.

17 One of the problems, however, was that the Salt
18 River frequently flooded, especially in the spring, and
19 that destroyed the canals and caused damage to crops and
20 homes that were in some proximity to the Salt River. The
21 Gila and the Agua Fria also flooded frequently in the
22 springtime.

23 So in 1911, the Salt River was dammed with the
24 Roosevelt Dam. The Roosevelt Dam is, based on my bit of
25 research, still the largest masonry dam in the world.

1 And the damming of the Salt and then some of
2 the dams that followed on the Gila and the Agua Fria
3 allowed the control of that water flow into the Phoenix
4 Basin and allowed to maintain the -- the canal system for
5 irrigating crops. But those dams and the damming of
6 those rivers, they also caused the wetlands to dry up.
7 And today, you see that these are largely dry riverbeds
8 except for intermittent flows and heavy rainfall.

9 But starting around 2000, efforts were made to
10 restore some of the wetlands to the three rivers area to
11 what -- the wetlands to what it would have looked like
12 back in the 1800s. And so in the area of the confluence
13 of the Salt and the Gila and the Agua Fria, which is
14 south of the project there -- and if you look at the map
15 here on the right, you can see this area here. I'm
16 trying not to shine my light in Carolyn's eyes. This is
17 known as the Tres Rios or Three Rivers area where these
18 three rivers come together.

19 And there's two preserves, wildlife wetland
20 preserves, that have been developed here in this area.

21 The first is called the Base and Meridian
22 Wildlife Area, and that's a 200-acre preserve on BLM
23 lands. It's managed by Arizona Game and Fish. It's a
24 wetland riparian riverbank habitat -- a lot of birds and
25 small animals -- and it's located generally around 115th

1 Avenue and Southern, near the racetrack. Used to be PIR.
2 I think it's now called ASM. But that's the location.

3 What's interesting about the Base and Meridian
4 Wildlife Area, in addition to now being a preserve in an
5 area where they're trying to restore the wetland habitat
6 that once existed, is it's right next to Monument Hill.
7 Monument Hill is .0, the starting point at which all of
8 the state of Arizona, the mapping of the state of
9 Arizona, is based. And there's a point on Monument Hill
10 where all the Salt River and base and meridian lines
11 emanate from, from that point on Monument Hill.

12 The other wildlife preserve is called the Tres
13 Rios River Restoration Project. That's a 700-acre
14 section along the Salt and Gila rivers. It uses treated
15 effluent from the 91st Avenue Water Treatment -- City of
16 Phoenix Water Treatment Plant, and they pump somewhere
17 around 150 million gallons of treated wastewater into
18 these wetlands.

19 And what was done was kind of a partnership
20 between the Army Corps of Engineers, the City of Phoenix,
21 and then the Maricopa County Flood Control District,
22 where they took farmland, graded it, created below-level
23 areas to flood them and create new wetlands. They even
24 went so far as to remove a lot of the non-native salt
25 cedar or tamarisk that had been growing in that area and

1 replaced it with cottonwoods. And that Tres Rios
2 Restoration Project is located around 91st Avenue and
3 Southern Avenue.

4 So those three projects are an effort to get
5 back to the wetlands as they existed back in the 1800s,
6 and it shows kind of the importance of these three rivers
7 to the history of the Phoenix Basin and, in fact, the
8 state of Arizona going back to 300 AD, the time when the
9 Hohokam first arrived here.

10 We haven't been working on this project quite
11 that long, not going back to 300 AD, but the planning
12 horizon has been pretty long.

13 And so let me talk a bit about the project and
14 what this case is about. It's really about two things:
15 Serving unique needs of a new datacenter customer.

16 I think this Committee has heard a couple
17 different datacenter cases. And the Committee
18 understands that datacenters are moving to the Valley in
19 fairly large numbers.

20 They're not being drawn here for the same
21 reasons that the Hohokam and the early settlers to
22 Arizona are being drawn here. They're being drawn to
23 this area because, one, we lack the natural disasters of
24 floods and hurricanes and earthquakes that can disrupt
25 datacenter operations. They're drawn here because

1 there's available and relatively inexpensive land.
2 They're drawn here because it's affordable and reliable
3 power. And they're drawn here because they're -- we're
4 right on the path of the major fiber optic cable system
5 on which that data flows openly.

6 The other thing that this case is about, it's
7 finding routes for two independent transmission lines to
8 cross Avondale --

9 And, Jason, can you flip me back to the project
10 map, please.

11 So as you can see from the map on the right
12 screen, the case is really about finding two routes for
13 two independent transmission lines to get across Avondale
14 and Goodyear, while minimizing the impacts on residents
15 and businesses in this area, streaming two 230kV
16 transmission lines across an urban environment while
17 doing their best to minimize impacts.

18 Let me start by talking just a little bit about
19 what's unique about a datacenter customer.

20 Typical customer uses anywhere from 5.5
21 kilowatts for an apartment down to roughly 500 kilowatts
22 for a large commercial business, say, a Home Depot, of
23 that size. So measured in kilowatts, datacenter
24 customers' electric load is measured in megawatts instead
25 of kilowatts. Their loads range from -- anywhere from

1 200 megawatts to 400 megawatts. And, in fact,
2 datacenters are described in terms of their size by the
3 amount of electrical load and energy that they use and
4 require.

5 Just for reference, 100 megawatts is enough to
6 power 80,000 homes. Datacenters use considerably more
7 power. And in this project, I think you'll hear that the
8 datacenter is going to use upwards of 300 megawatts.

9 Beyond the energy that's needed to power all
10 the servers and equipment that's housed within the
11 datacenter, they require a significant degree of
12 reliability in order to support the platform. That is,
13 they require redundant transmission service to meet their
14 reliability or their uptime demands. And uptime -- we
15 have a witness from Compass Datacenter, Mr. Curtis, who
16 will give you a lot more information on datacenters and
17 particularly Compass Datacenter.

18 But uptime is the amount of time in which the
19 datacenter is operational, and downtime is measured in
20 minutes or seconds per year. So that is the -- they have
21 to be operational somewhere in the neighborhood in excess
22 of 99.9 and add some 9s percent of the time. So that's
23 what drives that reliability needs, and that's the thing
24 that's unique to datacenters. And because of the load
25 and the reliability demands, they require a dedicated

1 substation.

2 So how do we plan to serve the new Compass
3 Datacenter?

4 As I mentioned, we need two independent 230kV
5 lines, a new 230kV substation, and that -- those lines
6 are going to interconnect to the Rudd-White Tanks line,
7 which is along the Agua Fria River. You can see it here.
8 It's going to be here to the east, where the existing
9 Rudd-White Tanks line is on the eastern edge of the Agua
10 Fria; and as you can see from the map on the right,
11 stringing those lines west to the new project substation
12 on the Compass Datacenter project site located along
13 Bullard Avenue.

14 So what was the process for selecting these
15 routes?

16 APS analyzed over 27 -- a 27-square-mile area.
17 The testimony you'll hear is they considered 100
18 individual links early on in the planning process, and
19 those links were then combined to develop seven
20 alternative routes that were then brought to the public
21 and the stakeholders.

22 They sent out three newsletters. Each
23 newsletter went out to 32,000 addresses or more. In
24 addition, there were in-person and virtual open houses
25 the first -- as I mentioned, the planning has been going

1 on for so long that we actually had an in-person open
2 house at the start of this project, and that was followed
3 by at least I think two virtual open houses. And we had
4 extensive use of social media, again, to publicize the
5 project and drive people to the project website and gain
6 feedback and input on the routes.

7 So what was learned from the planning process?

8 Well, the public and the stakeholders told us
9 to avoid existing and planned residential areas. We'd
10 also heard from the Phoenix Goodyear Airport that we
11 needed to avoid the airport flight paths, which are down
12 here. You can see the runway here. And so it's avoiding
13 putting in a transmission line that would interfere with
14 take-off and landing from the Phoenix Goodyear Airport
15 that pushed the project and the routes further to the
16 north.

17 They told us to utilize the corridors along
18 I-10 as much as possible, and they told us to use the
19 existing transmission line corridors wherever possible.
20 And that's what we did.

21 So what routes came out of the process?

22 We have a preferred route and two alternative
23 routes that are along the I-10 corridor here. You can
24 see -- I think it's hard to see the third one. But
25 the -- you have a preferred route here in orange and then

1 two alternatives that are on the southern side of I-10.

2 But from this point, which is 143rd Avenue, all
3 the project routes are the same. They follow this same
4 path. Come down Bullard Avenue, interconnect to the
5 Three Rivers Substation here that will serve the Compass
6 Datacenters. Then we have the second circuit that comes
7 back out, moves back up to Van Buren, and travels back
8 east to the Rudd-White Tanks line, 230kV line, which is
9 located here again on the edge of the Agua Fria River.

10 How are we going to present the case to you?

11 We have an APS witness panel. You see our
12 witnesses there who are employed by APS and/or APS
13 environmental consultants. We'll introduce that panel to
14 you here in a minute as soon as I'm done with my opening.

15 We also have Chris Curtis, who is a
16 representative of Compass Datacenters. Mr. Curtis will
17 tell you about Compass, their project, as well as their
18 load and reliability requirements.

19 We'll be utilizing the PowerPoint slide
20 presentations to support our testimony, and we'll also
21 have a virtual route tour, flyover simulation, that we
22 will use to show you the routes and the alternatives as
23 well as the corridor widths.

24 One of the issues was I-10 -- building along
25 I-10, which is what the public wanted us to do. We have

1 to do so in a way that avoids getting into the controlled
2 access, ADOT's controlled access, along I-10.

3 Our corridors are intended to allow -- give us
4 the flexibility to design and build the routes along I-10
5 but at the same time stay out of ADOT's controlled
6 access. You'll hear testimony about that.

7 So, in summary, the project serves a new
8 datacenter customer. The customer needs 230kV lines to
9 satisfy the load and reliability requirements.

10 The proposed northern and southern routes.
11 Here's the northern routes that have the three
12 alternatives and the southern routes here going back to
13 the Rudd-White Tanks line. Minimize the impact on
14 residents in the area.

15 And, overwhelmingly, the public has supported
16 the preferred route, again shown here in orange along
17 I-10.

18 That's the case, and we look forward to
19 presenting it to you.

20 Thanks.

21 CHMN. KATZ: Thank you. Are you ready to
22 proceed and call your first witness?

23 MR. DERSTINE: Yes. Ms. Benally will now
24 introduce our witness panel.

25 CHMN. KATZ: That would be fine. We will have

1 our four witnesses identified, but I will simultaneously
2 swear them all in. They've all agreed to take an oath,
3 so we don't need to worry about an affirmation.

4 MS. BENALLY: Thank you, Mr. Chairman.

5 In their witnesses' introductions, they will be
6 testifying relative to the veracity of the information,
7 the truthfulness of the information, so I didn't know if
8 it was Chairman's preference to swear them in before I do
9 the introductions or after I introduce the witnesses.

10 CHMN. KATZ: Why don't you go ahead and
11 introduce them, and then I'll have them all stand and
12 raise their right hand, and we'll swear them in.

13 MS. BENALLY: I will do so.

14 I would like to start with Mr. David Wiley.

15

16 DAVID WILEY, STEPHEN EICH, PAUL TRENTER,

17 AND TERESA O'NEIL,

18 called as a witness panel herein, having been duly sworn
19 en masse by the Chairman to speak the whole truth and
20 nothing but the truth, was examined and testified as
21 follows:

22

23 DIRECT EXAMINATION

24 BY MS. BENALLY:

25 Q. Good afternoon.

1 A. (By Mr. Wiley) Good afternoon.

2 Q. Would you please state your name and business
3 address for the record.

4 A. (By Mr. Wiley) My name is David Wiley. My
5 business address is 2121 West Cheryl Drive, Phoenix,
6 Arizona 85021.

7 Q. Mr. Wiley, you are the Supervisor of
8 Transmission Planning & Engineering at APS; is that
9 correct?

10 A. (By Mr. Wiley) Correct.

11 Q. And in that role as supervisor, you had
12 involvement with the Three Rivers 230kV Transmission Line
13 Project; is that right?

14 A. (By Mr. Wiley) Correct.

15 Q. So to introduce you to the Committee, would you
16 provide an overview of your education and work
17 experience. And I believe you have a slide that you'll
18 be working from.

19 A. (By Mr. Wiley) Certainly.

20 I received my bachelor's of science in
21 electrical engineering from Arizona State University in
22 2013. I then received my master's, also in electrical
23 engineering, with an emphasis in power systems, also from
24 ASU, in 2014.

25 I've been with APS for the past seven years. I

1 spent four years working as an engineer in the
2 Transmission & Planning Department or a role directly
3 related to that department. And I served as the
4 supervisor of the Transmission Planning and Engineering
5 Group for the past three years.

6 I am a licensed professional engineer in the
7 state of Arizona.

8 Q. Mr. Wiley, the Chairman's Procedural Order
9 required that we file a witness summary for our
10 witnesses. And you prepared a summary of your testimony
11 that APS filed on September 24th of 2021; is that right?

12 A. (By Mr. Wiley) Correct.

13 Q. And that's marked as APS-2 in the exhibit
14 binder; is that correct?

15 A. (By Mr. Wiley) Correct.

16 Q. Do you have any corrections you wish to make
17 today to APS-2?

18 A. (By Mr. Wiley) I do not.

19 Q. You also have a set of PowerPoint slides that
20 you're going to be using during the course of your
21 testimony that will be presented today. Is that -- that
22 is included as APS-7; is that correct?

23 A. (By Mr. Wiley) Correct.

24 Q. And were these PowerPoint slides prepared by
25 you or under your direction?

1 A. (By Mr. Wiley) Yes, they were.

2 Q. And have you reviewed these PowerPoint slides
3 before the hearing today?

4 A. (By Mr. Wiley) I have.

5 Q. And do you wish to make any corrections today?

6 A. (By Mr. Wiley) I do not.

7 Q. And, lastly, is the information that's
8 presented in your PowerPoint slides true and correct to
9 the best of your knowledge?

10 A. (By Mr. Wiley) Yes, it is.

11 Q. Okay. Great. Thank you.

12 CHMN. KATZ: Ms. Benally, what I think I'm
13 going to do is just swear all four of those witnesses in
14 to make sure everything they're telling us is correct.

15 And I will just ask Mr. Wiley one question once
16 we're done and ask if the information he has already
17 provided is true and correct.

18 But if you will all rise, I will administer the
19 oath. Please raise your hand -- or hands.

20 (The following were sworn en masse by the
21 Chairman: David Wiley, Stephen Eich, Paul Trenter, and
22 Teresa O'Neil.)

23 CHMN. KATZ: And, Mr. Wiley, I'll just
24 interrupt counsel for one thing. You've already given an
25 introduction about your education and your credentials.

1 Was everything you've stated so far on the
2 record true and correct subject to the penalties of
3 perjury?

4 MR. WILEY: Yes.

5 CHMN. KATZ: Thank you very much.

6 You may proceed.

7 MS. BENALLY: Thank you, Mr. Chairman.

8 Q. BY MS. BENALLY: Mr. Eich, I would like to move
9 to you next.

10 Good afternoon.

11 A. (By Mr. Wiley) Ms. Benally, would you like me
12 to cover my industry experience at this time?

13 Q. Yes, please do so. Thank you.

14 I apologize, Mr. Eich. If you will let us
15 pause for a moment. Thank you.

16 A. (By Mr. Wiley) I've been involved in the
17 industry at various levels throughout the past seven
18 years.

19 At an interconnectionwide level, I've been a
20 member of various working groups and committees at WECC.

21 On a regional level, I've been involved as the
22 APS representative for the Planning and Management
23 Committee of WestConnect.

24 On a global level, I was the APS subject matter
25 expert in the 11 BTA and presented at the 11 BTA

1 workshop.

2 Also, on a local level, I served as the chair
3 of the IEEE Power and Energy Society for the Phoenix
4 Chapter in 2017 to 2018.

5 Q. Thank you, Mr. Wiley. Anything further to add?

6 A. (By Mr. Wiley) No. Thank you.

7 Q. All right. Mr. Eich.

8 A. (By Mr. Eich) Yes.

9 Q. Please state your name and address for the
10 record, please.

11 A. (By Mr. Eich) Yes. My name is Stephen Eich,
12 and business address is 2121 West Cheryl Drive, Phoenix,
13 Arizona 85021.

14 Q. And you are a project manager for the Three
15 Rivers 230kV Transmission Line Project; is that right?

16 A. (By Mr. Eich) Yes.

17 Q. Would you please provide the Committee an
18 overview of your background, please.

19 A. (By Mr. Eich) Yes. My professional experience
20 is 15 years at APS, and that involves four years as a
21 survey instrument operator, one year as a service
22 coordinator, and both of those were in the customer
23 construction side of the company.

24 I also worked six years as a right-of-way agent
25 for APS acquiring land rights for APS facilities,

1 including easements and deeds, on the private side of the
2 acquisition.

3 I also worked with state and federal agencies,
4 specifically, with the Bureau of Land Management and the
5 National Forest Service, in acquiring grants, working
6 through the NEPA process for those, the National
7 Environmental Policy Act.

8 I also worked directly with the Arizona State
9 Land Department in acquiring and renewing permits and
10 ensuring compliance during construction and maintenance
11 of our lines on the Arizona State Trust Lands.

12 I also worked with the local jurisdictions,
13 including cities, to acquire construction permits and
14 roadways.

15 The past four years, I have worked as a siting
16 consultant. And I'm a senior right-of-way professional
17 in the International Right of Way Association or IRWA.

18 Q. As the project manager for the matter that's
19 before the Committee today, did you supervise the
20 preparation of the application for a Certificate of
21 Environmental Compatibility that was filed by APS?

22 A. (By Mr. Eich) Yes, I did.

23 Q. Have you had a chance to review that
24 application, which is marked as APS-1, after it was filed
25 by APS?

1 A. (By Mr. Eich) Yes.

2 Q. And do you have any corrections -- pardon --
3 corrections you wish to make to that application today?

4 A. (By Mr. Eich) No, I don't.

5 Q. Okay.

6 You also have several exhibits that have been
7 filed by APS that you will be sponsoring. Do you have
8 the exhibit binder in front of you?

9 A. (By Mr. Eich) Yes, I do.

10 Q. So did you prepare a witness summary for this
11 hearing?

12 A. (By Mr. Eich) Yes, I did.

13 Q. Okay. And your witness summary is marked as
14 APS-3; is that correct?

15 A. (By Mr. Eich) Yes.

16 Q. And do you have any changes you wish to make to
17 that witness summary today?

18 A. (By Mr. Eich) No.

19 Q. You also prepared PowerPoint slides to support
20 your testimony, which is included as APS-7 -- or at least
21 a part of APS-7; is that right?

22 A. (By Mr. Eich) Yes.

23 Q. And were your witness testimony slides prepared
24 by you or under your direction?

25 A. (By Mr. Eich) Yes, they were.

1 Q. And did you review that PowerPoint presentation
2 before the hearing today?

3 A. (By Mr. Eich) Yes, I did.

4 Q. Do you have any changes you wish to make or
5 corrections to the PowerPoint slide deck?

6 A. (By Mr. Eich) No.

7 Q. Okay. And the information that is included in
8 your PowerPoint presentation, is that true and correct to
9 the best of your knowledge?

10 A. (By Mr. Eich) Yes.

11 Q. Thank you.

12 And I believe we walked through all of your
13 slides, correct?

14 A. (By Mr. Eich) I believe so.

15 Q. Okay. Thank you.

16 MS. BENALLY: So now I'd like to move to
17 Mr. Paul Trenter.

18 Q. BY MS. BENALLY: Good afternoon, Mr. Trenter.

19 A. (By Mr. Trenter) Good afternoon.

20 Q. Would you please state your name and business
21 address for the record.

22 A. (By Mr. Trenter) Certainly.

23 My name is Paul Trenter. My business address
24 is 4685 South Ash Avenue, Tempe, Arizona 85282.

25 Q. For this project that's being heard by the

1 Committee today, you served as a co-project manager; is
2 that right?

3 A. (By Mr. Trenter) That's correct.

4 Q. To start, why don't we share with the Committee
5 an overview of both your education and your professional
6 background.

7 A. (By Mr. Trenter) Certainly.

8 I went to the University of Wisconsin. I have
9 a Bachelor of Science in landscape architecture.

10 I've been with the Environmental Planning Group
11 for 22 years. I've had various positions, from a
12 principal investigator to a project manager to the CEO at
13 the end.

14 We just went through a transition. We're now
15 part of Terracon. EPG is a subsidiary of the Terracon
16 companies.

17 I have more than 30 years of experience in the
18 utility planning and permitting industry and have either
19 provided testimony or provided supervision on more than
20 20 cases before this Committee.

21 Q. Thank you, Mr. Trenter.

22 You prepared a summary of your testimony; is
23 that correct?

24 A. (By Mr Trenter) Correct.

25 Q. And that's marked as APS-4 in the exhibit

1 binder?

2 A. (By Mr. Trenter) Yes.

3 Q. Do you have any corrections to APS-4 today?

4 A. (By Mr. Trenter) I do not.

5 Q. Okay. You also prepared a PowerPoint
6 presentation that will be used to support your testimony
7 during the case. That's marked as APS-7; is that
8 correct?

9 A. (By Mr. Trenter) Correct.

10 Q. And were these PowerPoint slides prepared by
11 you or under your direction?

12 A. (By Mr. Trenter) Yes, they were.

13 Q. Okay. You also have PowerPoint slides that
14 you'll be -- I'm sorry. Let me rephrase the question.

15 Included in your PowerPoint slides are various
16 maps, photos, and information. Would you share with the
17 Committee what the source of that information is, please.

18 A. (By Mr. Trenter) The source of the information
19 varied from State databases to ArcInfo databases. We
20 also did literature searches for the data as well.

21 Q. And did you have an opportunity to review your
22 PowerPoint presentation before the hearing today?

23 A. (By Mr. Trenter) Yes, I did.

24 Q. And do you have any changes or corrections you
25 wish to make to those slides?

1 A. (By Mr. Trenter) I do not.

2 Q. And to the best of your knowledge, is the
3 information in those slides true and correct?

4 A. (By Mr. Trenter) Correct.

5 Q. Thank you.

6 MS. BENALLY: So now, I would like to move on
7 to Ms. O'Neil.

8 Q. BY MS. BENALLY: Would you please state your
9 name and business address for the record, please.

10 A. (By Ms. O'Neil) Certainly.

11 My name is Teresa O'Neil. My business address
12 is 4685 South Ash Avenue, Tempe, Arizona 85282.

13 Q. Thank you.

14 Let's now move to an overview of what your
15 educational and professional background is, Ms. O'Neil.

16 A. (By Ms. O'Neil) Yes. I received a Bachelor of
17 Science in landscape architecture from the University of
18 Illinois.

19 I'm an environmental planner with Environmental
20 Planning Group, and I have 15 years of experience in
21 preparing environmental studies for both utilities and
22 transportation projects, in which time I've managed or
23 participated in more than 40 environmental planning
24 studies.

25 Q. And for this particular project that's before

1 the Committee today, you served as a co-project manager;
2 is that correct?

3 A. (By Ms. O'Neil) Yes.

4 Q. So APS also filed witness summaries, and there
5 was one also prepared by you, which is marked as APS-5;
6 is that correct?

7 A. (By Ms. O'Neil) Yes.

8 Q. All right. And do you have any corrections you
9 wish to make to APS-5 today?

10 A. (By Ms. O'Neil) I do not.

11 Q. You also have PowerPoint slides that you will
12 be using to support your testimony. Those are marked as
13 APS-7 and are included as a part of that filing.

14 Were these PowerPoint slides prepared by you?

15 A. (By Ms. O'Neil) They were.

16 Q. And the slides contain various types of
17 information such as maps, photos, and information. Would
18 you please share with the Committee the source of that
19 information, please.

20 A. (By Ms. O'Neil.)

21 Certainly. The source of the information I
22 based my testimony on is from numerous publicly available
23 sources, including GIS maps, county and city databases,
24 and plans.

25 Q. Did you have a chance to review your PowerPoint

1 slides before the hearing today?

2 A. (By Ms. O'Neil) I did.

3 Q. And do you have any changes or corrections you
4 wish to make to your PowerPoint slides?

5 A. (By Ms. O'Neil) I do not.

6 Q. And, finally, is the information that is
7 included in the presentation true and correct to the best
8 of your knowledge?

9 A. (By Ms. O'Neil) Yes, it is.

10 MS. BENALLY: Thank you.

11 That completes my introduction of the witness
12 panel, Mr. Chairman.

13 CHMN. KATZ: You may proceed in calling your
14 first witness.

15 MS. BENALLY: Mr. Derstine will be calling our
16 first witness, which I believe is Mr. David Wiley.

17 MR. DERSTINE: You're first up, Mr. Wiley.

18

19 DIRECT EXAMINATION

20 BY MR. DERSTINE:

21 Q. I think we're going to start your testimony
22 with a summary of APS, its service territory and
23 transmission system. Please proceed.

24 A. (By Mr. Wiley) APS has been serving Arizona
25 for over 125 years. We have about 1.3 million customers.

1 So we serve approximately 1.3 million customers. We
2 reached our all-time peak demand on July 30th of 2020 of
3 approximately 7,700 megawatts.

4 APS has nearly 500 substations, roughly 300,000
5 transformers, and more than 550,000 poles and structures.

6 We have nearly 6,000 miles of transmission
7 lines, 11,000 miles of overhead distribution lines, and
8 22,000 miles of underground cable.

9 We serve 11 of Arizona's 15 counties, covering
10 a service territory of roughly 35,000 square miles.

11 I'd like to orient you to the map on the
12 right-hand screen. This map shows our service territory
13 as outlined in white. You'll see that we serve the area
14 around Holbrook in Navajo County, the area of Flagstaff
15 on up to the Grand Canyon Village in Coconino County, the
16 Verde Valley area in Yavapai County, Payson and the
17 surrounding areas in Gila County, the area in La Paz
18 County out near Parker, Yuma in Yuma County, Casa Grande
19 and surrounding areas in Pinal County, and the southern
20 portion of Cochise County near Douglas.

21 Focusing in more on the Phoenix Metropolitan
22 Area, APS serves the downtown Phoenix area, the Paradise
23 Valley, Scottsdale, and North Phoenix areas, as well as
24 the West Valley.

25 You will see the gold star here in the

1 Avondale-Goodyear area representing the project site.

2 Q. All right. Mr. Wiley, can you take us in a
3 little closer to the project site, the gold star on the
4 map on your right, and describe kind of the transmission
5 facilities that are in the area of the project, please.

6 A. (By Mr. Wiley) Certainly.

7 To orient you on this map, we have the I-17
8 running north-south, and we have the I-10 running
9 east-west along the southern portion of the map.

10 The area in the Southwest Valley includes one
11 500-230 transformer, the Rudd Station.

12 There are three 230-69 substations, which are
13 the White Tanks Substation, the Palm Valley Substation,
14 and the Freedom Substation.

15 You will also see several red dashed lines
16 representing 230kV planned projects.

17 You will also see solid black lines
18 representing 230 and 500kV infrastructure in the area.

19 Focusing in a little bit more closely to the
20 project site, again, we have the Rudd 500 and 230kv
21 substation, the three 330-69 substations, which are White
22 Tanks, Palm Valley, and the Freedom Substations.

23 Also in the area are ten additional
24 distribution substations, which are our 69 and 12kv
25 substations serving the greater area. Those are denoted

1 as the triangles on this map.

2 There are also five substations currently
3 serving datacenter loads, and they're at 69kV that will
4 be transitioning to 230kV as those sites develop further.
5 Those substations are the Stratus Substation, the Runway
6 Substation, Broadway Substation, and the Three Rivers
7 Substation.

8 Q. I want to make sure I understand the
9 substations that you just pointed out. These five
10 substations, those are all datacenter projects that are
11 in various stages of construction. They're currently
12 served at the 69kV level, but ultimately, they'll be
13 served at the 230kV level as they will for this project;
14 is that right?

15 A. (By Mr. Wiley) That's correct.

16 MR. DERSTINE: Mr. Chairman, with that
17 background, we thought this would be the right moment to
18 call Mr. Chris Curtis, who is the co-founder and senior
19 vice president of Compass Datacenters. He'll need to be
20 sworn. Maybe one of our witnesses can give up their spot
21 over on the panel, and then Mr. Curtis has a presentation
22 to make. And we thought it was better to hear from
23 Compass in terms of their project and give you more
24 information about the data centers.

25 CHMN. KATZ: And I'll ask you, if you would,

1 Mr. Curtis, to raise your right hand.

2 (Chris Curtis was duly sworn by the Chairman.)

3 CHMN. KATZ: You may have a seat.

4 Counsel, you may begin.

5 MR. DERSTINE: I don't have a lot of direct
6 questions for Mr. Curtis. We've brought him in and he
7 has a presentation to give to the Committee, so I'll
8 simply turn him loose.

9

10 CHRIS CURTIS,
11 called as a witness herein, having been previously duly
12 sworn by the Chairman to speak the whole truth and
13 nothing but the truth, was examined and testified as
14 follows:

15

16 DIRECT TESTIMONY

17 MR. CURTIS: Thank you, Chairman and Committee
18 Members.

19 We thank everyone involved in this process.

20 It's obviously been a very well thought out process, very
21 well vetted and very well executed, so thank you so much
22 for your time and consideration.

23 I'm Chris Curtis. I founded Compass
24 Datacenters with my partner, Chris Crosby, in 2011. I
25 lead our development and acquisitions, among other

1 things, and I'm the one that was mostly responsible for
2 spearheading this project here in the West Valley that is
3 the subject matter of this hearing today.

4 Who is Compass Datacenters?

5 As I mentioned, we founded in 2011. My partner
6 was also one of the co-founders of a company called
7 Digital Realty Trust, which was one of the original
8 wholesale datacenter providers. So we have a vast amount
9 of experience in the datacenter business, and our typical
10 model is that we build and lease datacenters to our
11 customers. Potentially, would sell also to our
12 customers, but we do not typically merchant build and
13 sell them to other real estate companies, but only to the
14 customer.

15 We have developed multiple projects in North
16 America, both U.S. and Canada, and are currently
17 expanding and have several projects going in Europe, the
18 Middle East, and potentially Asia.

19 So our -- because of our industry -- and, also,
20 I'm sorry, we are a very well funded company. Our
21 capital stack continues to grow. This business is a very
22 capital-intensive business. Currently, we have
23 effectively \$3 billion worth of committed investments, of
24 which we've deployed a little over half. And our capital
25 stack continues to grow as our projects continue to grow.

1 So let me just mention why Goodyear -- and if
2 you will, it may be a good time to kind of show an intro
3 video.

4 (Video shown.)

5 MR. CURTIS: My apologies. Those numbers were
6 a little bit wrong, which I'll get to in a moment, about
7 the total megawatt capacity of the campus.

8 CHMN. KATZ: Mr. Derstine, do we have that
9 video that was played as an exhibit?

10 MR. DERSTINE: We don't have it as an exhibit.
11 We can certainly -- I'm not sure how we would do that,
12 but I guess we could use an electronic version and submit
13 it to the docket, unless we can -- we'll caucus at a
14 break and we'll figure out how we can make it part of the
15 record.

16 CHMN. KATZ: That's fine. It should be. It
17 was played, and, obviously, I hope the court reporter
18 didn't try to take down all the verbiage. So we'll make
19 that part of the record.

20 MR. DERSTINE: We'll do that.

21 CHMN. KATZ: Feel free to proceed.

22 MR. CURTIS: I want to be respectful of the
23 Committee's time, but a little of history of our
24 datacenters and how did we get here now where we have
25 such large campuses that require such large capacity.

1 Historically, datacenters, if you were a
2 Fortune 1000 enterprise customer, you typically had your
3 own datacenter. And a datacenter really is just power
4 that doesn't go out, so you have redundant light power,
5 fiber connection that will not go out, so you have
6 multiple fiber connections, a robust building that can
7 withstand high winds and other things like that. And
8 also the cooling is extremely important because these
9 computers put out a lot of heat.

10 So -- and the efficiency of the datacenter is
11 measured by how much of the energy actually goes to the
12 IT load or critical load versus everything else. And our
13 datacenters are some of the most efficient in the
14 industry, which I'll get to in a moment.

15 So, for many years, if you were a Fortune 500
16 company, a Bank of America, etc., you really had to build
17 your own datacenters and operate your own datacenters.
18 Sometimes you would build your own; sometimes you would
19 lease them from other players, such as Digital Royalty
20 Trust or other such folks.

21 What has really happened over the last five or
22 six or seven years is a large adoption of the public
23 cloud, so enterprises have a very difficult time
24 predicting their demand. It takes them some time to
25 build datacenters, and it's difficult to understand your

1 growth needs. And, also, simply put, enterprises cannot
2 replicate the security level and the redundancy and the
3 geographical diversity of the largest technology
4 companies in the world.

5 So over the last five or six years, there's
6 been a large adoption of the public cloud, which means
7 that many of these enterprise companies, rather than
8 operate their own datacenters, have decided to put that
9 load into a datacenter from a large technology company
10 such as Microsoft or Google or AWS, etc. So it's been a
11 large consolidation into a few datacenters rather than
12 being spread out and diverse amongst several enterprise
13 datacenters.

14 In the past, you know, most enterprises leased
15 space or built space, and they thought of things in
16 1-megawatt chunks. And they may grow, you know, from 1
17 to 5 megawatts, but those are the typical size of
18 enterprise deals. Now, leases are 30 megawatts, and they
19 want to make sure that they can get to at least 150
20 megawatts on a particular security perimeter campus.

21 So that gives you a little bit of a background
22 on why we're here and how we're here.

23 So what we're trying to achieve here is really
24 capture and make one of the main availabilities in
25 America and in the world for one of the main hubs that is

1 going to be our future and our current economy.

2 All you need to do is look around in our lives
3 today with our computers, our phones, our online banking,
4 our online shopping. Really, instead of the old days of
5 train depots and the ports such as Los Angeles and New
6 Orleans and things like that that were the commerce
7 centers of the world, datacenters are really the
8 foundation in a commerce center of the world that we live
9 in today.

10 So as these very large players grow, they have
11 to establish where they're going to have their main
12 availabilities and their main hubs. And historically, in
13 America, there were really six or seven main datacenter
14 markets, and that was the undisputed king, which was
15 Northern Virginia, which approximately 75 or 80 percent
16 of the internet traffic in the world still flows through
17 Northern Virginia to this day; Northern New Jersey,
18 Silicon Valley; Santa Clara; Phoenix was one of those
19 markets; Atlanta; Dallas; Chicago.

20 Why? Infrastructure. It was difficult to find
21 the power, difficult to find the fiber, etc. What has
22 happened is the need has grown. We need larger space.
23 We need even larger infrastructure. And things along
24 those lines is why you're seeing these large, very large
25 technology companies making decisions now about where are

1 we going to locate to have some of our main hubs as we
2 build our internet across the world. And that's what's
3 happened here.

4 So that's why we need such a large load. This
5 campus actually could have -- we have currently one
6 building on this campus, one large building we've built,
7 which is a 45-megawatt overall load capacity. About 30
8 megawatts of that is critical load. And we have the
9 ability to build seven more of those on this campus plus
10 three or four other smaller buildings, for a total of
11 approximately 360 megawatts of load.

12 As I mentioned earlier, we are a little bit
13 different than what you may have seen here in the West
14 Valley. We are not an end user building for our
15 ourselves for our sole use. We are a company that could
16 potentially lease this entire campus to one customer, but
17 we have really designed it in such a way to where we can
18 also divide it up and lease it to multiple customers.

19 Latency is a big deal. That is how far you are
20 from other datacenters, the speed of light over a train
21 of fiber distance. So being located near other large
22 datacenters, very important datacenters, is important to
23 a lot of customers.

24 Currently, we have leased a portion of that
25 building to a very large technology company. And two

1 months later, they already signed on for an expansion
2 lease. And we expect them to continue to expand in these
3 8-megawatt total load/5-megawatt critical load chunks at
4 a similar pace. Whether or not they'll take the entire
5 campus remains to be seen, but we also have other
6 interest from other customers.

7 Currently, this campus, as mentioned before, we
8 have worked with APS to build a 69kv substation, and that
9 gets us up to about 120 megawatts. So that gets us up to
10 about a third of the load that our overall campus would
11 need. So the numbers alone tell you that we have to have
12 this 230kV substation in order for our campus to be fully
13 utilized.

14 So one thing that was mentioned also earlier is
15 the reliability.

16 So why West Valley? Why APS? Relatively low
17 rates. The ability to obtain renewable generation at a
18 fair rate is very important to our customers. Most of
19 our customers require 100 percent renewable energy.
20 Large sites. The ability to extend infrastructure, to
21 find an authority having jurisdiction partner that can
22 understand the scope of this project, a utility provider
23 such as APS that can work with us to extend such
24 significant infrastructure. And I have to say that APS
25 has been a phenomenal partner thus far, and we look

1 forward to continuing to grow this project.

2 Reliability is another very important issue.

3 Almost all of our customers require redundant feeds.

4 Whether those are 69kV feeds or 230kV feeds, it's very

5 important. As I mentioned earlier, downtime costs a

6 tremendous amount of money. Imagine not being able to

7 get into your bank account for a day. Imagine air

8 traffic control being completely down for 30 minutes.

9 The cost of downtime is almost insurmountable and

10 incalculable and can be a risk to human lives. So

11 redundancy is very important. Here in this part of the

12 Valley, we have the ability, if this is successful in our

13 line siting project, to create such redundant power in

14 very large loads.

15 Low risk of disaster, as mentioned by the

16 attorney earlier, is also a very significant factor, also

17 being near skilled labor and things like technology

18 employees, people that can maintain the equipment, things

19 along those lines.

20 So these are all important factors for why we

21 decided to choose West Valley Phoenix and this service

22 territory.

23 One thing that is unique, also, about Compass

24 is that we use -- out of all the datacenters we've built

25 to date, we use very little cooling in our water -- water

1 in our cooling. From day one, we've always thought that
2 water is a precious resource. Typically, datacenters
3 traditionally use significant amounts of water in their
4 cooling. A campus of this size, for example, cooled in
5 the traditional way, would use somewhere in the
6 neighborhood of 4 to 5 million gallons per day.

7 This campus, at full build-out, designed the
8 Compass way, will use a fraction of that, 200-300,000
9 gallons per day, because we really only need water for
10 our offices, for humidification to prevent static
11 electricity, and for some bathrooms and break rooms and
12 things along those lines. We really don't use water at
13 all for cooling. We use compression heat wheel heat
14 exchangers. And so that's been an objective of ours from
15 day one, is to use very little water in our cooling. And
16 we think we've been at the forefront of that in the
17 datacenter industry.

18 So with that, I think I'd be happy to answer
19 any questions. I think that should tell the story.

20 CHMN. KATZ: Counsel, before I see if any of
21 our Committee Members have questions, do you have any
22 follow-up for this witness?

23 MR. DERSTINE: The only question I wanted to
24 follow up with Mr. Curtis on was, Mr. Curtis, you offered
25 a letter in support of the project to the

1 Committee August 31, 2020, and it's marked as APS Exhibit
2 15. It gives kind of a high-level overview of the
3 Compass Datacenter and the reason why Compass supports
4 this project.

5 Is there any -- other than the letter, I guess
6 we appreciate you being here and providing testimony to
7 the Committee.

8 I don't have any specific questions for you,
9 but I make him available to the Committee for any
10 questions.

11 CHMN. KATZ: Anybody to my right?

12 MEMBER HAENICHEN: Mr. Chairman.

13 CHMN. KATZ: Yes, sir, Mr. Haenichen.

14 MEMBER HAENICHEN: Mr. Curtis, I'd like a
15 little more detail on the way you reject heat from the
16 cooling system using limited amounts of water.

17 MR. CURTIS: Yes. So we have a couple of
18 different methods, but we haven't -- one of our methods
19 is using a heat wheel, which has been used industrially
20 for some time, but not really used in the datacenter
21 application.

22 So, essentially, we have -- you know, the air
23 circulates through the datacenter. And it comes back to
24 the unit, and the hot air hits the wheel. It spins fan
25 speed, cools the wheel, and that process continues.

1 We have another very similar design that does
2 not use the heat wheel but uses a very similar heat
3 projection method. And it's really about fans being on
4 certain hot days, using some compression, similar to what
5 would be used in a typical commercial or home unit.

6 MEMBER HAENICHEN: Another air-heat change?

7 MR. CURTIS: Yes.

8 MEMBER HAENICHEN: Using that system, then,
9 after this gets built, roughly what percentage of the
10 total incoming electrical energy is used for that purpose
11 as a heat rejection?

12 MR. CURTIS: I mean, I would have to ask. I'm
13 not an expert on that particular number. But our PUEs,
14 which is the power utility efficiency rating, which is
15 kind of the measure or metric that datacenters use to
16 determine the efficiency of their datacenters, are very
17 low, in the 1.2 to 1.35 range, which is potentially even
18 lower, depending on the loads.

19 So what that means is anywhere from 15 to 30
20 percent of the power that is coming to the datacenter is
21 used for something other than the computers. And that is
22 best in class in the industry.

23 MEMBER HAENICHEN: Thank you.

24 CHMN. KATZ: Does anyone to my right have any
25 questions?

1 MEMBER HAMWAY: Thank you, Mr. Chairman.

2 Just one clarifying question. For those five
3 squares and then you've got four smaller squares, are
4 those the buildout that you were talking about?

5 MR. CURTIS: If you point to the map, you'll
6 see the yellow highlighted area.

7 MEMBER HAMWAY: Okay.

8 MR. CURTIS: So if you look, there's a
9 rectangle that shows where the current 69kv substation
10 and future 230kv substation will be. And just to the
11 right, there's a T-shaped building. If you can just see
12 that outline, that is one of our -- that's the first
13 building that we have built, our -- what we call the
14 Moonraker. It's a 30-megawatt critical load/45-megawatt
15 IT load. And so the rest of the highlighted yellow area
16 is where we would continue to build up to seven more of
17 those buildings and four other smaller. You can see
18 there's also smaller buildings just north, which we call
19 our Thunderball. You may see the theme. That is our
20 campus.

21 MEMBER HAMWAY: And you said that each one of
22 these datacenters needs its own substation. So will all
23 seven of those new physical buildings that you're doing
24 each need a substation?

25 MR. CURTIS: No, Ms. Commissioner. Currently,

1 this proposed 230kV substation would be sufficient to
2 supply the entire campus.

3 MEMBER HAMWAY: And what is the height of your
4 buildings?

5 MR. CURTIS: Our buildings are approximately 32
6 feet tall, I believe.

7 MEMBER HAMWAY: Okay. And so the 2,000-3,000
8 gallons that you use daily, that's potable, correct?
9 Because that's serving break rooms and people and
10 restrooms and that sort of thing. So you don't use any
11 water at all for cooling?

12 MR. CURTIS: That's correct. The only water we
13 use in cooling would be for humidification.

14 MEMBER HAMWAY: All right. Thank you.

15 CHMN. KATZ: Anybody else?

16 MEMBER DRAGO: Thanks, Mr. Curtis, for the
17 explanation of your business. I have a question about
18 your customers.

19 You said they're typically the Fortune 1000
20 companies. The question I have about that is, can you
21 give me an idea of the environmental standard of the
22 businesses? As a user of, say, the iCloud, right? Fit
23 me into the datacenter. So is it some -- some capacity
24 used by Apple and then we use a piece of that?

25 MR. CURTIS: That's a very good analogy, yes.

1 Apple is not a customer on this campus or
2 certainly not one I can speak of at this time. But that
3 is exactly right. If you -- if you use an iCloud, then
4 there are analogous buildings sitting somewhere in
5 America and across the world that Apple has full of
6 computers that are datacenters, and that is where that
7 data is stored.

8 There are large hubs, availabilities, if you
9 will, where these massive several-hundred-megawatt
10 datacenters are. I mean, as I mentioned, latency is
11 important, so there might be smaller datacenters closer
12 to the end users or latencies, so you don't see the
13 spinning wheel on your TV set when you're trying to
14 download your documents from iCloud.

15 But that is exactly right. It's just a
16 consolidation of all the compute and the memory and the
17 data that we all use in our daily lives.

18 MEMBER DRAGO: Thank you.

19 CHMN. KATZ: Anybody else?

20 Any of our folks that are appearing virtually
21 have any questions for this witness?

22 MEMBER GRINNELL: Mr. Chairman.

23 CHMN. KATZ: Yes.

24 MEMBER GRINNELL: To that information on the
25 datacenters, financial institutions may be one of your

1 clients and things of this nature.

2 Can you elaborate a little bit more on the
3 security measures of all that data, and how is that
4 protected? That's my first question.

5 CHMN. KATZ: Just for the record, that's
6 Mr. Grinnell addressing the witness.

7 Go ahead.

8 MR. CURTIS: Well, security is extremely
9 important. We have 24/7 security guards, 24 hours a day,
10 seven days a week. We have installed a perimeter
11 security fence. So physical security is very important.

12 Some customers have even higher security
13 standards, such as SCIF, you know, governmental
14 requirements, and those take a little bit extra. And we
15 have the ability to do such things to avoid, you know,
16 certain other elements, electronic elements.

17 There's also the application layer security and
18 the fiber -- you know, internet security piece of it that
19 we at Compass don't get involved in, but our customers
20 are some of the best in the world at the -- you know, the
21 actual security of the information and even using
22 artificial intelligence to secure that information,
23 cybersecurity. Highly important.

24 MEMBER GRINNELL: And, also, would you be
25 the -- I guess, the primary user of these extensions of

1 these utility lines?

2 MR. CURTIS: Could you repeat the question.

3 MEMBER GRINNELL: I'm sorry. Would you be the
4 primary user of all these extensions of these security
5 lines -- or utility lines, excuse me?

6 MR. CURTIS: Yes and no.

7 Obviously, we -- our buildings -- we deliver a
8 fully functioning commissioned datacenter, meaning that
9 our customers can come and put their computers in that
10 datacenter, and it works in all aspects. But we -- we
11 stop at the plug in the wall, if you will, at the air
12 conditioner.

13 So if the customer wanted us to be the customer
14 of the utility and then charge the customer, we could do
15 that. That is not our favored model. Typically, what
16 would happen is that we build the infrastructure, design
17 the substation, have the power there. And then when our
18 customer signs the lease, they will come to APS, the
19 utility, and sign the service agreement for the actual
20 power and be their APS customer. But we can do it either
21 way. But, typically, our customers are so large they
22 have those relationships and they prefer to have a direct
23 contract with the utility.

24 MEMBER GRINNELL: And if I may digress back one
25 more step to the security issue.

1 I noticed in today's paper in Phoenix that the
2 governor's office is establishing some kind of
3 cybersecurity.

4 You talked about security and personnel in
5 physical. What about the cybersecurity measures that are
6 being incorporated? And I realize you can't do
7 everything to stop everything, but can you just expand
8 on --

9 MR. CURTIS: Sure.

10 MEMBER GRINNELL: -- that a little bit further,
11 please.

12 MR. CURTIS: Sure. As mentioned, you know,
13 we -- in the past, Fortune 1000 companies were our main
14 customers and still are. But the customers for this
15 campus -- our first customer is a very, very large
16 technology company. I wouldn't hazard a guess at where
17 they are on the Fortune list, but they are very, very up
18 in the top. And they are some of the very best in the
19 industry as far as cybersecurity. These are some of the
20 top technology companies in the world that will locate on
21 this campus. Their cybersecurity is absolute best in
22 class, world class.

23 In the past, for example, on my personal
24 computer, I have Norton Antivirus and things along those
25 lines. And that's all fine and good, but that just can't

1 keep up with the real security threats out there, the
2 denial of service attacks, the foreign actor attacks.
3 And so they have a great deal of history dealing with
4 these cybersecurity threats, tremendous staff, and have
5 designed into their system even using artificial
6 intelligence so that the computers are thinking at
7 computer speed, not at human speed, in order to reject
8 these attacks.

9 MEMBER GRINNELL: Thank you, Mr. Chairman.

10 CHMN. KATZ: Any other of our virtual
11 participants have any questions that they would like to
12 present to this witness?

13 (No response.)

14 CHMN. KATZ: Hearing silence, I guess we don't
15 have any more questions, Counsel.

16

17 DIRECT EXAMINATION

18 BY MR. DERSTINE:

19 Q. Mr. Curtis, the one question you used -- or the
20 term you used was "hyposcale" or "hyperscale" of
21 customers. Tell me what that is. I'm not sure I
22 understand you.

23 A. Well, as mentioned, not that long ago, a
24 customer would acquire demand or demand space in 1- to 5-
25 to 10-megawatt chunks of demand.

1 Well, now our customers are, you know, the
2 smallest -- you know, 30 megawatts growing up to 100 to
3 200 megawatts. So it's really referring to the size of
4 the lease, the size of the customer demand.

5 As I mentioned, demand for all of our stuff has
6 been consolidated into a few very large users, and those
7 are typically referred to as hyperscale users.

8 Rather than Bank of America going and building
9 their own datacenters, they call one of these
10 hyperscalers and say, "We want you to take care of the
11 computer for us. And we'll run the applications and
12 things. You handle the compute in your datacenters. We
13 don't want to actually own the computers." So that's the
14 hyperscalers that I was referring to.

15 Q. And I gather from the question you just had
16 that the customers are in charge of their own
17 cybersecurity. Compass Datacenters is in charge of the
18 physical security of the facility, protecting the
19 hardware, that sort of thing. But in terms of each user,
20 each hyperscaler customer would be in charge of their own
21 cybersecurity and protecting the data that's being run
22 through the hardware that's located within the
23 datacenter?

24 A. Yes. That's very well said.

25 MR. DERSTINE: Okay. That's all I have for

1 Mr. Curtis. If the Committee has more questions.

2 CHMN. KATZ: Any further questions?

3 May the witness be excused?

4 MR. DERSTINE: Thank you, Mr. Curtis.

5 MR. CURTIS: Thank you for your time.

6 CHMN. KATZ: You're welcome to stay or depart.

7 Thank you very much.

8 (The witness was excused.)

9 CHMN. KATZ: And we did start a bit after 1:00,
10 so maybe in about 10 or 15 minutes, we'll take our break.

11 Feel free to proceed with your prior witness or
12 your next witness.

13 MR. DERSTINE: Thank you, Mr. Chairman. We are
14 going to continue with Mr. Wiley for a bit.

15

16 DAVID WILEY, STEPHEN EICH, PAUL TRENTER,

17 AND TERESA O'NEIL,

18 called as a witness panel herein, having been previously
19 duly sworn en masse by the Chairman to speak the whole
20 truth and nothing but the truth, was examined and
21 testified as follows:

22

23 DIRECT EXAMINATION (Cont.)

24 BY MR. DERSTINE:

25 Q. Mr. Wiley, you heard Mr. Curtis's testimony

1 about the Compass Datacenter. Is there anything that you
2 wanted to highlight about the Compass Datacenter that is
3 important for the Committee to understand in terms of the
4 need -- the service needs of this project?

5 A. (By Mr. Wiley) Certainly.

6 As Mr. Curtis testified, the anticipated load
7 of this datacenter campus can be upwards of 360
8 megawatts. Just to put that into perspective, the
9 combined cities of Avondale and Goodyear are somewhere in
10 the range of 450 to 500 megawatts.

11 Mr. Curtis also testified as to the operations
12 of Compass Datacenters and how they use leasing
13 agreements with their clients and must be able to expand
14 their operations very quickly. Likewise, APS must be
15 ready to serve that growing load and have the proper
16 infrastructure in place to meet the anticipated load of
17 the customer.

18 Q. Go back for a minute. Member Grinnell had a
19 question about, I think, whether or not this project is
20 intended only to serve the Compass Datacenter or whether
21 it has some other sort of a broader -- it could be used
22 more broadly by other customers in the area. Can you
23 speak to that?

24 A. (By Mr. Wiley) Certainly. And I'll testify
25 further -- further on in my presentation here about the

1 specifics of the substation that will be serving them.

2 But based on the size that they're anticipated
3 to grow to, which is that 360 megawatts, this substation
4 would be fully used by Compass Datacenters.

5 Q. Thanks. I think you're going to testify more
6 directly on the purpose and need for the project and
7 talking about the actual facilities that are needed to
8 serve the datacenter.

9 A. (By Mr. Wiley) So, as we mentioned, the
10 project is looking to be upwards of 360 megawatts. And
11 to be able to serve that amount of load necessitates
12 230kV infrastructure.

13 Initial load, as Mr. Curtis testified, is being
14 served off the 69kV substation, but we are limited on the
15 load-serving abilities of that 69kV substation.

16 Therefore, the purpose of this project is to bring 230kV
17 infrastructure to the customer site to serve their load.

18 If I orientate you to the map on the right-hand
19 screen, you will see our existing transmission corridor
20 noted as Point A.

21 So this project is looking to bring in 230kV
22 facilities, specifically, from our Rudd-to-White Tanks
23 230kV line, and bring that over to the customer's site,
24 which is highlighted in yellow.

25 The purpose of this project is to bring 230kV

1 from the existing transmission corridor, Point A, to the
2 customer's site at Point B.

3 Service from the 230kV system does meet the
4 long-term needs of both Compass Datacenters as well as
5 the continuing load growth in the surrounding areas.

6 As noted in Staff's letter, which is Exhibit
7 APS-21, the reliability of the 230kV system is maintained
8 with the addition of this project.

9 Mr. Curtis testified to requirements of serving
10 the datacenter. He talked about a couple different
11 things.

12 One is having redundant feeds and the
13 reliability needs of those datacenters.

14 Common requirements in datacenters is to have
15 99.999 percent up time. That equates to approximately
16 only five minutes a year of downtime.

17 To help meet those datacenter requirements,
18 we're proposing two different connections to the existing
19 system. We'll be cutting -- excuse me -- we'll be
20 cutting in from the existing transmission corridor,
21 routing along back to the customer's site, and then
22 having a second connection from the customer's site back
23 to the existing transmission corridor. So we'll have one
24 line coming in to the customer's site and a second line
25 coming back out in a separate alignment.

1 This eliminates any single point of failure,
2 such as a common transmission structure. And common
3 transmission structures are considered credible planning
4 events, as denoted in those standards.

5 Q. Let me stop you there a minute and make sure I
6 understand.

7 So when you're talking about a common failure,
8 am I correct in understanding that the reason for having
9 two independent lines to serve this datacenter, given the
10 reliability requirements that Mr. Curtis testified to,
11 that if, say, the northern line were to go out because a
12 pole went down due to a storm or some sort of event, but
13 the reason for the second circuit is that you're able to
14 maintain service to the datacenter from the second line
15 that follows along on the south that you just pointed out
16 on the map on the right screen?

17 A. (By Mr. Wiley) That is correct. A loss of
18 either of these lines would not result in loss of load to
19 the customer.

20 Q. Okay.

21 Do you want to talk a bit about the substation
22 that's being used to serve the datacenter?

23 A. (By Mr. Wiley) Certainly.

24 So the Three Rivers Substation is going to be
25 centrally located on the customer's site. On the map on

1 the right-hand screen, you'll see the customer's site in
2 yellow and the substation in the hatched area in the
3 center.

4 The substation will be served by two 230kV
5 lines, one connection to the Rudd Substation and a second
6 connection to the White Tanks 230kV Substation.

7 There will be three 230-to-69kV transformers
8 and four 69kV feeds going directly to the customer.

9 Q. So I want to make sure I understand.

10 So the feeds that are going directly to the
11 customer, those are the lines that are coming out of the
12 new Three Rivers Substation, and they're coming out at --
13 I'm looking at the notation there -- at 69 or 34.5kV.
14 And those are going out to the various buildings, the
15 datacenter buildings that Mr. Curtis testified to
16 under -- two are under construction and development, and
17 then there's plans for future datacenter buildings in the
18 future. Is that -- do I have that right?

19 A. (By Mr. Wiley) The 69kV feeds coming out of
20 the APS substation will be going directly to Compass
21 Datacenters, and they at that point will step down that
22 69kV to whatever operating voltage. I believe it to be
23 34.5kV.

24 Q. So on the left-hand side of the diagram,
25 looking at the screen on the right here in the hearing

1 room, you said that one of the 230kV lines goes to the
2 Rudd 230kV Substation, and the other line goes to the
3 White Tanks 230kV Substation. Do I have that right?

4 A. (By Mr. Wiley) That's correct.

5 Q. So can you show us, how do those -- how does
6 the direction to these two different substations, how
7 does that happen when using the two interconnection
8 points on the Rudd-White Tanks Line?

9 A. (By Mr. Wiley) Can you please repeat the
10 question.

11 Q. Yeah. I'm just wondering how -- in terms of
12 your showing the two lines -- I'm familiar with the map
13 where it shows two lines coming into the substation.

14 How do we differentiate in terms of is northern
15 line the one that's going into Rudd and then the southern
16 line going into the White Tanks Substation? Is that --
17 is that how it's -- they're separated?

18 A. (By Mr. Wiley) I'll go back one slide and take
19 a look at this map here.

20 Q. Yeah.

21 A. (By Mr. Wiley) This is the customer
22 substation. This connection here, people call it the
23 northern connection, feeds back to the White Tanks
24 Substation. And the southern connection will head back
25 to the Rudd Substation.

1 Q. All right. Got it.

2 Anything else the Committee should know about
3 the substation, it's design, or construction? I guess
4 where are we in terms of the development? I thought
5 Mr. Curtis mentioned that you're operating at 69kV
6 currently; is that right?

7 A. (By Mr. Wiley) That's correct. In June of
8 2020, we energized the substation at 69kV to serve some
9 of their initial load. However, it cannot be served up
10 to the 360 megawatts. That would necessitate a
11 transmission level with 230kV interconnection.

12 The substation is currently being served by two
13 69kV lines, the APS Bullard and the APS Wildflower
14 substations. And currently, the site is providing two
15 69kV feeds to the customer to serve their initial load.

16 Q. And is there -- on the development horizon, is
17 there an anticipated in-service date for the 230 side of
18 the substation?

19 A. (By Mr. Wiley) The in-service date for the 230
20 substation is planned for 2023, with a construction start
21 in 2022.

22 Q. Anything else on the substation?

23 A. (By Mr. Wiley) No.

24 Q. I think the last topic that you have,
25 Mr. Wiley, for this part of our presentation before we'll

1 take a break is the Ten-Year Plan filing. We're required
2 to include any projects above 115kV within APS's Ten-Year
3 Plan. Was that done for this project?

4 A. (By Mr. Wiley) Yes, it was. APS first
5 included this project in its 2019 ten-year plan, the
6 Supplemental Ten-Year Plan filed on June 12th of 2019.
7 We've also included the project in our subsequent filings
8 on January 31st, 2020, and January 29th, 2021.

9 The map on the right-hand screen is a typical
10 map of what we include in our Ten-Year Plan filings, and
11 you will see the Three Rivers Substation and the
12 corresponding 230kV lines with the 2023 in-service date.

13 MR. DERSTINE: All right. Thank you.

14 I think we're at a stopping point, if that
15 works.

16 I think we have a question.

17 MEMBER HAENICHEN: Mr. Chairman.

18 I don't know whom I should address this to but
19 the panel in general.

20 To your knowledge, have any of these large
21 datacenter operations engaged in storing electricity on
22 site to help with the redundancy in question, battery
23 storage?

24 MR. WILEY: Member Haenichen, I'm not aware of
25 any significant amount of battery store, certainly none

1 that is injecting back into the transmission.

2 MEMBER HAENICHEN: Wouldn't that be another way
3 to get redundancy?

4 MR. WILEY: I do not know the specifics of
5 Compass Datacenters. I do know that datacenters in
6 general do look at having on-site backup generation. But
7 some companies I am aware of are looking at having
8 additional wires, transmission lines, feeding their sites
9 to meet the clean energy initiatives. Many of these
10 back-up generations are diesel generators, and a lot of
11 companies looking to go with them are looking for -- are
12 looking to additional wires as opposed to diesel
13 generation.

14 Q. BY MR. DERSTINE: But, to your knowledge, are
15 any datacenters -- you indicated there are roughly five
16 datacenters that are in various stages of development
17 that are currently being served from the 69kV
18 substations. You testified to that in a prior slide.

19 Do any of the datacenters that APS is currently
20 working with, are any of them using battery storage of
21 some size to satisfy some of their reliability needs to
22 your knowledge?

23 A. (By Mr. Wiley) I'm not aware of any.

24 MEMBER HAENICHEN: Mr. Chairman.

25 CHMN. KATZ: Yes.

1 MEMBER HAENICHEN: The reason I asked the
2 question is diesel generators take time to fire up, and
3 battery storage is instantaneous. And I'm just shocked
4 that somebody isn't doing that here.

5 MR. DERSTINE: I'm guessing that's on the
6 horizon.

7 CHMN. KATZ: Do we have any other questions for
8 this witness at this time from any of our Committee
9 Members who are present in the room?

10 (No response.)

11 CHMN. KATZ: Seeing no show of hands or hearing
12 no outspoken voices, any of our virtual participants have
13 any questions?

14 (No response.)

15 CHMN. KATZ: Hearing silence, it's about -- I
16 think about 2:41. I'd like to have us take about a
17 15-minute break. I'd like to get started no later than
18 3:00.

19 In my first hearing that I attended, we were
20 kind of loose. And I want to maintain as informal an
21 atmosphere as possible, but I want to make sure that our
22 breaks don't exceed 15 minutes so we don't drag into the
23 early evening hours. So let's take our break.

24 (A recess was taken from 2:42 p.m. to
25 3:00 p.m.)

1 Q. BY MR. DERSTINE: Mr. Eich, you're up.

2 During the witness introduction, you introduced
3 yourself as the project manager for the Three Rivers
4 Transmission Line Project. Do I have that right?

5 A. (By Mr. Eich) Yes.

6 Q. What does it mean to be the project manager?

7 A. (By Mr. Eich) It means if anything goes wrong,
8 I'm in trouble. I -- I oversee all aspects of the
9 project.

10 Q. Okay. From the early planning and development
11 phase up through this hearing, right?

12 A. (By Mr. Eich) Correct.

13 Q. Okay. And you happen to live in the study area
14 for the project, right?

15 A. (By Mr. Eich) Yes. Thank you for pointing
16 that out.

17 Q. Well, I just found it fascinating that you were
18 getting your own newsletters.

19 A. (By Mr. Eich) Yes, I was.

20 Q. All right. And we -- I won't try to go too far
21 afield, but I think you also indicated that your wife and
22 maybe members of the family were out encouraging people
23 to comment, good or bad. It wasn't -- it wasn't one way
24 or another. You were getting the family to help support
25 the project and comment, right?

1 A. (By Mr. Eich) It was a family effort, yes.

2 Q. Very good. All right. Well, let's -- let's
3 start with an overview of the project, if you will.

4 A. (By Mr. Eich) As Mr. Wiley explained, the
5 project need is for two separate single-circuit 230kV
6 lines which would connect APS's Rudd-to-White Tanks 230kV
7 transmission line -- and that's highlighted here in
8 green -- to APS's Three Rivers Substation, which is on
9 the customer's datacenter site, one connection being a
10 northern connection, the separate connection leaving the
11 substation back to the 230kV line being along the
12 southern connection. Both connections to the substation
13 and back would form one entire route.

14 The substation is located approximately 3 miles
15 from the existing 230kV line.

16 Q. So the -- just moving from east to west, from
17 the Rudd-White Tanks transmission line, which is shown in
18 green on your map on the right screen, over to the Three
19 Rivers Substation on the Compass Datacenter site, that's
20 approximately 3 miles just straight across; is that
21 right?

22 A. (By Mr. Eich) Yes. So that's about a 3-mile
23 distance as the crow flies.

24 Q. All right. So when we're talking about the
25 routes, and that involves the two different

1 single-circuit connections, that round trip is going to
2 be somewhere around 7 miles plus, given the -- depending
3 on the alternative route, right?

4 A. (By Mr. Eich) Correct.

5 And, as has been mentioned before, I probably
6 should have started by orienting you to the map.

7 Again, this is the I-10 running across the
8 middle of the project area.

9 We have the Agua Fria River, which our 230kV
10 line runs parallel with for the most part.

11 Again, the Phoenix Goodyear Airport located
12 here, as we mentioned before.

13 So I apologize for not pointing that out again.

14 One thing that I wanted to mention is that
15 there are two locations that would be planned as double
16 circuit for this project. One location would be along
17 the north side of the Three Rivers Substation. Both of
18 these lines or connections would enter the Three Rivers
19 Substation from Bullard Road, which is on the east side
20 of the datacenter site.

21 And due to the lack of room or space in
22 entering our substation, we are largely limited to just
23 along the north side of that substation, where we would
24 be building a single set of structures.

25 So we propose those structures only at that

1 location be built as double circuit to accommodate that
2 north connection as well as that south connection as it
3 leaves the substation. And we estimate maybe one, two
4 spans at the most for that double circuit.

5 CHMN. KATZ: If I might interject, I just had
6 one question. And that is, we are showing that the
7 northern line will run or deliver power from east to
8 west, and then the southern line brings it back to the
9 original substation.

10 What would happen -- because we were talking
11 earlier about redundancy and making sure that things
12 wouldn't shut down. What happens if the northern line
13 had an interruption or failed? Would the current get
14 reversed and go toward the facility along the southern
15 route?

16 MR. EICH: Chairman Katz, thank you for that.
17 These arrows are primarily for making my
18 discussion simpler. The actual direction of the current
19 can go either way.

20 CHMN. KATZ: I just wanted to clarify that.
21 Thank you very much.

22 MR. EICH: Thank you.

23 A. (By Mr. Eich) So, as I was mentioning, this
24 portion on the north side of the Three Rivers Substation
25 being built as double circuit, entering and exiting the

1 substation.

2 The second location would be anywhere along the
3 I-10 for that crossing of the I-10 only. Essentially,
4 from one pole on the north side of the I-10 to one pole
5 on the south side of the I-10 we propose as being built
6 as double circuit.

7 Anytime APS needs to run wires across the
8 roadway, especially a busy roadway such as the I-10, it
9 does involve traffic disruptions such as lane closures
10 and traffic delays, sometimes detours. So to consolidate
11 and prepare for any future projects, we propose building
12 just that crossing as double circuit. Although we would
13 only utilize one circuit for this project, only one
14 circuit would be energized for this project, we propose
15 having that extra circuit to be in place for any future
16 project need.

17 The West Valley is rapidly growing. And
18 although we don't have that need today, we do anticipate
19 there will likely be a need to cross the interstate again
20 in the future. Having that there would allow us to not
21 have to disrupt the traffic at that time.

22 MEMBER HAENICHEN: Mr. Chairman.

23 Would there actually be wire strung on that
24 second circuit?

25 MR. EICH: Yes. That's what we're proposing.

1 MEMBER HAENICHEN: But they wouldn't go
2 anywhere other than to the internal points?

3 MR. EICH: Correct, from one pole on the north
4 to one pole on the south.

5 MEMBER HAENICHEN: Thank you.

6 CHMN. KATZ: That was Mr. Haenichen.

7 Q. BY MR. DERSTINE: So, Mr. Eich, I just want to
8 make sure I understand and the Committee understands.

9 So this project is for two single-circuit 230kV
10 lines running from the Rudd-White Tanks line along the
11 northern connection, which will be along I-10, and then a
12 southern connection, which will be along Van Buren.

13 The only exceptions to the -- to the
14 description is a single-circuit -- two single-circuit
15 lines is that where the -- those two lines are entering
16 the Three Rivers Substation on the Compass Datacenter
17 site, I gather there's not enough room to have two
18 separate entry points, and so you're going to collocate
19 both 230kV circuits onto a single structure.

20 So at that point, there will be one or two
21 stands which will be double circuit just to come in and
22 out of the Three Rivers Substation. Do I have that
23 right?

24 A. (By Mr. Eich) That's correct.

25 Q. And then the only other location is where we're

1 crossing I-10, and you described the reason for it; that
2 is, that you're going to have a double-circuit structure,
3 I guess, on one side of I-10 and a double-circuit
4 structure at the other side, and you're going to string a
5 second conductor at that crossing, but it's just going to
6 hang in the air unless or until we have another project
7 that comes along.

8 If it's a new 230kV project, we'll be back
9 before this Committee seeking a CEC. If it's a 69kV you
10 need, then you would be able to interconnect that second
11 circuit with your 69kV system. Do I have that right?

12 A. (By Mr. Eich) That is correct.

13 Q. All right.

14 All right. Your next chapter here is Key
15 Elements. And I think what we're looking to talk about
16 here is kind of an introduction to the routes that we're
17 going to present to the Committee. Do I have that right?

18 A. (By Mr. Eich) Yes.

19 So the key elements I wanted to emphasize can
20 be seen on this map; again, this dashed blue line
21 representing the existing 230kV line.

22 What I wanted to emphasize is that for all
23 three route alternatives, meaning the orange line
24 representing the preferred route, the dark blue line
25 representing our Alternative Route 1, and the light blue

1 or cyan-colored line representing our Alternative Route
2 2, all three of those would differ only along the I-10.

3 Once we get to this point here, which is the
4 143rd Avenue alignment, all three routes would be in
5 common, which share the same alignment to the Three
6 Rivers Substation and then from the Three Rivers
7 Substation along Van Buren back to the 230kV line.

8 Q. It's hard for me -- and I have these big
9 glasses on, but sometimes it's hard to differentiate
10 those colors. Ms. Benally suggested to me that you may
11 want to refer the Committee to the placemat, which may --
12 I think it's easier to maybe see the difference in terms
13 of those three alternatives where they're following along
14 I-10.

15 A. (By Mr. Eich) Yes. Thank you. One side does
16 have all three of the alternatives shown.

17 Would you like me to repeat?

18 Q. No. Can you just kind of compare and contrast
19 the dark blue and the light blue, because it looks like
20 they essentially follow each other except for that one --
21 for that one segment there.

22 The dark blue, which I guess is Alternative
23 Route 1, starts at the same spot as the preferred route
24 in orange. But then it crosses I-10 at an earlier
25 junction.

1 Can you just kind of take us through the
2 differences in those -- the alternatives along I-10.

3 A. (By Mr. Eich) Yes. Would you like me to share
4 that with the aerial overview?

5 Q. Yeah, that's a great idea. Because we've
6 got -- you have some sort of a presentation. You could
7 utilize Google Earth. That may be even better than the
8 placemat in terms of showing us these different routes.

9 A. (By Mr. Eich) Okay. If we could cue that up
10 on the right screen.

11 There we go.

12 Q. So talk a little bit about what you're going to
13 show us here.

14 This is a -- I guess was an early -- it was
15 going to be a virtual tour that we will present --
16 Mr. Trenter will present a bit later in the case. But
17 for now, this is kind of an early snapshot, still using
18 the Google Earth base, the virtual tour that maybe is a
19 better way to see the routes and their differences; is
20 that right?

21 A. (By Mr. Eich) Yeah, I think so. That's the
22 intent.

23 Q. All right.

24 A. (By Mr. Eich) So I'll go ahead and play this
25 now.

1 (Presentation of virtual tour.)

2 A. (By Mr. Eich) This is showing our study area.
3 The Goodyear Airport in the south here. We have the Agua
4 Fria River shown in green running north to south.

5 These are existing transmission and
6 subtransmission lines in the area.

7 We'll zoom in so you can get a little bit
8 closer look at these.

9 We'll identify the main corridors, the I-10
10 road, the Van Buren Street and Yuma Road at the bottom.

11 We have Dysart Road on the east side running
12 north to south.

13 Next is Litchfield Road in the center running
14 north to south and Bullard Avenue on the left-hand side
15 running north to south.

16 The customer datacenter site highlighted in
17 yellow, with the Three Rivers Substation in white.

18 And, again, this is the existing
19 transmission/subtransmission lines.

20 I want to pause here for a moment just to show
21 these green lines are existing 69kV lines in the area.

22 This is the Van Buren Street alignment here,
23 this 69kV line that runs on the north side of this
24 street. It does, however, cross to the south just before
25 the Agua Fria River and crosses the river on the south

1 side of Van Buren.

2 There's also an existing 69kV line running
3 parallel with other transmission lines in the river area.

4 There is a Tucson Electric Power line that is
5 sandwiched between our 69kv line and this blue line,
6 which is our 230kV Rudd-to-White Tanks line. Again, that
7 Rudd-to-White Tanks begins here, travels down the river,
8 cuts back to the east as it heads down to our Rudd
9 Substation just out of the project study area.

10 Again, this is showing the existing 230kV line.
11 This shows -- back up a little bit. This shows the
12 preferred route in orange running entirely on the north
13 side of the I-10 before crossing at that 143rd Avenue
14 alignment.

15 This shows the Alternative Route 1, which is
16 that dark blue, which begins in the same location along
17 the north side of the I-10 before crossing sooner. This
18 is the Central Avenue alignment.

19 And this is the Alternative Route 2, which is
20 on the south side of the I-10 entirely.

21 Again, from this common point of 143rd on, for
22 each alternative, they all share the same alignment.

23 Q. So all the routes are the same from 143rd
24 Avenue down to the Three Rivers Substation. And then, as
25 they make their way back up to Van Buren and back to the

1 east to the Rudd-White Tanks line, those are all the
2 same, there's no variations for those portions of the
3 project; is that right?

4 A. (By Mr. Eich) That is correct. And that's
5 approximately 70 percent of the project for each
6 alternative.

7 Q. So the preferred and the two alternatives that
8 are in the application that we're presenting to the
9 Committee, that's really the one choice they have to
10 make, is whether or not they agree with APS that the
11 preferred is the best route or whether they'll select one
12 of those two alternatives. The remainder of the project,
13 it's one route?

14 A. (By Mr. Eich) Yes.

15 Q. Okay.

16 MEMBER GRINNELL: Mr. Chairman.

17 CHMN. KATZ: Yes.

18 MEMBER GRINNELL: I'd like to ask a question
19 regarding what is the reason to present the two
20 alternative routes around the I-10 area?

21 CHMN. KATZ: That's Mr. Grinnell, correct?

22 MEMBER GRINNELL: Yes.

23 MR. EICH: Mr. Grinnell -- Member Grinnell,
24 excuse me, the reason is to be able to have a couple of
25 alternatives that also met the requirements, as Mr. Wiley

1 asked -- or required for this project. Although each of
2 these alternative routes would meet that requirement, we
3 considered the preferred route as meeting that
4 requirement probably the best. These other two routes
5 were kind of next in that line of what would meet that
6 requirement best.

7 MR. DERSTINE: And, Member Grinnell, I think
8 you'll hear testimony from Mr. Eich further in terms of
9 the planning and the various links and routes that we've
10 considered through the planning process. But we always
11 seek to present alternatives to the Committee as best we
12 can.

13 Sometimes, as it turns out in this case, we
14 ended up with 70 percent of the project is on a single
15 route. But we thought it was important, where we could,
16 to present the Committee with alternatives, although we
17 think that the preferred route shown in orange is clearly
18 the best route. And you'll hear testimony about that and
19 why.

20 MEMBER GRINNELL: Thank you.

21 Q. BY MR. DERSTINE: All right. Let's talk about
22 the planning process for the project, Mr. Eich.

23 When did we start the planning process?

24 A. (By Mr. Eich) We actually started in early
25 2019.

1 Q. Take us through that process. Maybe give us an
2 overview of what -- how you approached it and what you
3 did.

4 A. (By Mr. Eich) Yeah. So we began this process,
5 as we do our typical siting process, in first identifying
6 preliminary links and a preliminary study area from which
7 we could then determine feasible links and a refined
8 study area.

9 From that, we were able to determine
10 preliminary alternatives and further review. We were
11 eventually able to identify the refined alternatives that
12 we're presenting today.

13 Q. All right. Preliminary links that you're going
14 to show us here in a minute, but are those just small
15 segments that you've identified that might be suitable
16 for a transmission line, and you just laid all those out
17 on a map? Is that what a preliminary link is?

18 A. (By Mr. Eich) Yeah. Preliminary links are
19 short little segments that might lend themselves well for
20 running a transmission line. And it's just broken up
21 into smaller segments so that we can get specific input
22 from stakeholders and the public on those specific
23 smaller areas.

24 Q. All right. Walk us through the process and how
25 you identified those preliminary links in the study area.

1 A. (By Mr. Eich) So because we knew we needed two
2 connections, we identified a preliminary route along
3 McDowell Road and Bullard Road, as highlighted there in
4 green, as well as a southern connection along Yuma Road.

5 We then took a two-mile buffer off of that to
6 identify a larger preliminary study area. In that larger
7 study area, we were able to identify over 100 preliminary
8 links from which we could conduct a Preliminary
9 Environmental Study and Engineering Constructability and
10 Design Review. We did this before we brought anything
11 forward to the public at our first open house so that we
12 could make sure that whatever we brought forward was
13 actually feasible.

14 And in this preliminary review, this map shows
15 those links that we mentioned earlier. Each link has a
16 number identifying that specific link to get some
17 detailed information.

18 This is a map of Figure 4 of our application.
19 However, it is a modified map showing the links that
20 remained after that initial review in green and the links
21 that were removed in black.

22 There were two criteria that played heavily
23 into this preliminary review as well as throughout the
24 entire process, one of them being the Phoenix Goodyear
25 Airport. In order to ensure that we brought forward

1 feasible links, we had to consider the clearance needs of
2 the airport and their airspace. We worked closely with
3 them for preliminary evaluations of these lines, certain
4 points throughout. And these particular links here were
5 considered not feasible to build, largely because of the
6 Phoenix Goodyear Airport.

7 Q. So the black links on the south, when you see
8 these links here -- we're talking about those links that
9 are shown in black on the southern part of the map --
10 those are the ones that we did not bring forward because
11 of conflicts with operations of the airport?

12 A. (By Mr. Eich) Correct.

13 These links that are located near the north
14 side of the project are primarily located in residential
15 neighborhoods. Again, these are roadways through those
16 neighbors. And to build any large transmission line
17 within a neighborhood is difficult. And the sensitivity
18 of building within those neighborhoods played into this,
19 which resulted in the removal of these links shown here
20 in black on the north as well.

21 Q. Okay. So your available links really shrunk
22 based on the black links on the south and the black links
23 to the north, and that brought you more to the center of
24 the study area map, right?

25 A. (By Mr. Eich) Yes. At this point, we were

1 ready to bring some feasible links forward to the public
2 at our first open house.

3 This map is the map that was brought forward
4 and used at our public open house, again maintaining
5 numbers on each link that we could continue to get
6 feedback from the public on. We were also able to refine
7 our study area as shown by this dashed black line. And
8 that study area was based off of a 1-mile buffer around
9 the perimeter of these feasible links.

10 So, as I mentioned, we brought this forward at
11 our first open house, where we requested input from the
12 public. Based on that public input and further studies
13 and review, we found that the public did indeed want to
14 keep this further from the residential areas and push it
15 closer to the I-10.

16 We also found a lot of support for that
17 existing 69kV line that ran along Van Buren to rebuild
18 and collocate with that line.

19 The links shown in red are those links that
20 were then determined to be removed.

21 This map shows what links remained. We then
22 were able to begin the next phase of route development
23 based on these links.

24 Q. So Slide 82, the map on Slide 82, is kind of
25 where you ended up after your first round. After you had

1 done your initial screening and took away some links off
2 the map and presented the remaining links to the public,
3 the public commented, and what was left based on the
4 public feedback and input were the links that are shown
5 on Slide 82. Do I have that right?

6 A. (By Mr. Eich) Correct.

7 Q. Okay. All right. Take us through where you
8 went from here in terms of your route development.

9 A. (By Mr. Eich) So we were ready to begin
10 identifying full routes that would connect from our
11 existing transmission line to our substation. And in
12 that process, we started linking these links together to
13 develop these route alternatives.

14 This map shows seven alternative routes that we
15 were able to identify. Each route is shown as a
16 different color. And as we began to go through this
17 process, we noticed two main corridors beginning to
18 emerge that tend to come up to the surface for that
19 northern connection along the I-10 as well as that
20 southern connection along Van Buren.

21 We took this map to our next open house,
22 inviting the public to give us further input on which
23 routes that they would prefer. And we also included
24 these link numbers in case they wanted to specify any
25 portion of those routes or comment on any portion of

1 those routes.

2 This map, as I said, went forward to the
3 public. We gathered their input and information. And
4 through further evaluation, we were able to identify
5 these three alternative routes that we're presenting
6 before you today. These three routes did meet that
7 qualification for two separate single-circuit 230kV lines
8 connecting to the substation and back to our existing
9 230kV line shown as the preferred route in orange, the
10 alternative route in dark -- our Alternative Route 1 in
11 blue, and the Alternative Route 2 in cyan.

12 Q. Using the prior map, you indicated you
13 maintained the link numbers. You presented the routes,
14 but the routes had individual link numbers. So I assume
15 folks could say, "Well, I like Route 4, but I don't like
16 one or two links of Route 4." Or "I could live with
17 Route 3, but I don't like this link or that link."

18 Is that the reason for maintaining those link
19 numbers?

20 A. (By Mr. Eich) Exactly, yes.

21 Q. And did you receive any feedback like that? I
22 know we're going to get into public outreach and comments
23 a bit later in the case. But did you receive any
24 feedback where people specifically commented on a
25 numbered link?

1 A. (By Mr. Eich) Not much. We did get some
2 feedback on preference, for example, on the south side of
3 the I-10. This route, although it continues on this way,
4 they did indicate that they would prefer the Bullard Road
5 alignment with that route.

6 Q. Okay. All right. Anything else you want to
7 discuss in terms of the route development before we
8 actually talk about the routes once again?

9 A. (By Mr. Eich) No, I don't.

10 Q. Okay. All right. Let's talk about the routes.
11 I think here you have some specific information
12 on each one of the preferred and the alternatives routes
13 in terms of length and etc., features, right?

14 A. (By Mr. Eich) Yes. So starting with the
15 preferred route.

16 The preferred route, in its entirety, from the
17 north connection to the substation and back to the
18 existing 230kV line, is just over 7 1/2 miles.

19 Again, the only portion which it differs from
20 the other alternative routes is along the I-10. And this
21 would be located primarily on the north side of the I-10.

22 Because it would be on the north side of the
23 I-10 from approximately Dysart Road to beyond the 143rd
24 Avenue alignment, all that is owned by the City of
25 Goodyear.

1 Because it would be on the north side of the
2 I-10, it would also minimize the number of developed
3 businesses that are on the south side of I-10. These
4 businesses are located essentially from the river to
5 Litchfield Road.

6 It would also keep us further from residential
7 houses and apartments. There's a housing community just
8 between Van Buren and the I-10 and Dysart Road and
9 Central Avenue.

10 And it also crosses at a location that is
11 preferred by Arizona Department of Transportation.

12 They requested that we avoid main intersections
13 along the main corridors because of the traffic
14 disruptions that that would cause. So this 143rd Avenue
15 alignment would avoid that.

16 Where it crosses to the south, there is
17 currently farmland. It's agricultural land being farmed.
18 And we would continue along that I-10 route to Bullard
19 Avenue.

20 From Bullard Avenue, we would continue south.
21 Our intent would be to keep it on the east side of
22 Bullard Avenue along that farmland, that agricultural
23 side.

24 However, we wouldn't cross over to the west
25 once we get over to Van Buren Road because we have an

1 existing 69kV line running north and south along Bullard
2 Avenue, just south of Van Buren Road, that we would
3 rebuild and collocate this line with.

4 Once we got to our substation, we would enter
5 the substation from Bullard Road.

6 We would then exit the substation, head to the
7 east.

8 And in this alignment, there is also to be a
9 69kV project. It is not currently in place today, but it
10 will be before this project would be constructed. So we
11 would follow that 69kV alignment, as well, as we cross
12 Bullard Avenue to 145th Avenue, running north a short
13 distance and then back -- I'm sorry. I might have
14 referred to this as 145th. This is 143rd Avenue. And
15 then back to 145th Avenue. And then from there we
16 continue north, again rebuilding that 69kV line that will
17 be there.

18 Once we get to Van Buren Street, we would be on
19 the north side of the street, and we would rebuild that
20 existing 69kV line and collocate with that line the
21 entire way until we go across the river.

22 Again, going back to what I mentioned before,
23 that 69 crosses on the north side -- or on the south side
24 of Van Buren Road. We, however, would stay on the north
25 side in crossing the river and then connect back into our

1 existing 230kV line.

2 Q. Can I stop you there a minute.

3 So the existing 69 you've mentioned is on the
4 north side of Van Buren. But then as it gets to the
5 river, it crosses Van Buren to the south; is that right?

6 A. (By Mr. Eich) Correct.

7 Q. Okay. But the intent is for this project, that
8 is, the 230kV circuit, will stay on the north side, so it
9 will separate from the 69kV line there once we are
10 approaching the Agua Fria River, and that's where it will
11 join move into the -- cross and join the Rudd-White Tanks
12 line?

13 A. (By Mr. Eich) Yes.

14 Q. Okay.

15 CHMN. KATZ: I just have one question. And
16 that is, you mentioned that the portion of the line that
17 is north of the I-10 runs through property that is all
18 owned by the City of Goodyear; is that correct?

19 MR. EICH: Correct.

20 CHMN. KATZ: None of it is within the ADOT
21 corridor except perhaps where you have to cross the
22 freeway to head south at 143rd?

23 MR. EICH: Correct. The intent would be to
24 stay out of the ADOT right-of-way along that portion
25 there.

1 CHMN. KATZ: Thank you.

2 Q. BY MR. DERSTINE: And looking at your bullet
3 here where it says -- well, there's a section where --
4 maybe it's the prior slide. Oh, this is south of I-10.

5 When I'm driving in on I-10 to get here, I
6 noticed that on the north side, there's a lot of vacant
7 or apparently undeveloped land. Is that -- are we
8 crossing those segments of undeveloped land on the north
9 side of I-10 with the preferred route?

10 A. (By Mr. Eich) Are you referring to --

11 Q. Yeah, where it says: Minimizes number of
12 developed businesses crossed.

13 Is that because of those open parcels that I
14 saw on the north side of I-10 as I was driving here?

15 A. (By Mr. Eich) Exactly, yeah. It is currently
16 vacant along -- from Dysart Road heading west. And it, I
17 believe, goes to at least Bullard Avenue. All that land
18 is owned by the City of Goodyear, and it is vacant.

19 Q. Okay. And Mr. Trenter will talk about the
20 future land use for those parcels, I guess, when we get
21 to his portion of the testimony.

22 A. (By Mr. Eich) You bet.

23 Q. Can I ask you, using the laser pointer, across
24 from the Compass Datacenter parcel, there are large white
25 rectangles or blocks. What -- I assume those are

1 depicting some large structures of some kind. What are
2 we looking at there?

3 A. (By Mr. Eich) These light buildings shown just
4 east of Bullard here?

5 Q. Correct.

6 A. (By Mr. Eich) Those are existing industrial
7 buildings that are already in place. There's a lot of
8 industry growth out here.

9 Q. So that area where the line is going to come
10 out of the Three Rivers Substation and start heading east
11 and then it moves north, that's an industrial area, and
12 you said those are industrial buildings that the line
13 will pass?

14 A. (By Mr. Eich) Yes.

15 Q. Okay. And then what's the nature of the -- are
16 the businesses along Van Buren? Is that -- what are we
17 looking at there?

18 A. (By Mr. Eich) So the businesses that are along
19 Van Buren are primarily businesses.

20 Q. Yeah. But retail, different types?

21 A. (By Mr. Eich) Yeah. Retail businesses,
22 commercial.

23 Q. And is there a little bit of residential there
24 along Van Buren as well?

25 A. (By Mr. Eich) There -- there is. And I

1 believe Ms. O'Neil will get into the details of that,
2 those residential locations.

3 Q. Okay. All right.

4 A. (By Mr. Eich) I did also want to point out
5 that approximately 45 percent of the route would be
6 rebuilt and collocated with 69kV lines as indicated by
7 this green area here. And that would be -- that would
8 apply for all three alternatives.

9 So now I'm getting onto Alternative Route 1. I
10 don't think I need to go through the entire route because
11 of the common areas, but I will try to point out those
12 areas that differ.

13 Again, this is just over 7 1/2 miles. It would
14 begin at the same location as the preferred route on the
15 north side of the I-10 and follow the same alignment up
16 until Central Avenue, which is this location here between
17 Dysart and Litchfield Road, where it would cross to the
18 south at an existing distribution line that crosses the
19 I-10.

20 This was preferred by ADOT as well because it
21 would be collocating with that distribution line. It
22 also is avoiding the main roadway intersections.

23 From this point on the south side of the I-10,
24 it would continue west all the way to that common point
25 at 143rd alignment.

1 Because it is on the south side of the I-10
2 from Central Avenue onto Litchfield, there are additional
3 businesses already there that it would need to cross.

4 From Litchfield Road, it would cross primarily
5 agricultural lands.

6 Again, from the 143rd Avenue alignment, it
7 would follow that same alignment as the preferred route.

8 Q. When you said that ADOT preferred that
9 crossing, has ADOT expressed a preference for one route,
10 preferred or Alternative 1 or Alternative 2?

11 A. (By Mr. Eich) ADOT hasn't expressed a
12 preferred route.

13 Q. But the -- as to the crossings, the crossing
14 for the preferred route and then the different crossing
15 for Alternative 1, am I correct in understanding that
16 ADOT has since they approved those two crossing points?

17 A. (By Mr. Eich) Yes. Those were preferred
18 crossing locations.

19 Q. Okay. But ADOT doesn't have a preferred
20 alternative along I-10?

21 A. (By Mr. Eich) No.

22 Q. All right.

23 A. (By Mr. Eich) I also want to point out
24 that this -- where it does cross the I-10 does tend to
25 bring it closer to the residential neighborhood located

1 between Van Buren and the I-10. There are some
2 apartments just south of the I-10, as well, located
3 between Dysart and Central Avenue.

4 Alternative Route 2 would begin on the south
5 side of the I-10. It's just under 7 1/2 miles, and it
6 would stay entirely on the south side of the I-10.

7 It would cross additional businesses on the
8 south side of the I-10. And some of the location of
9 these businesses would cause some additional construction
10 challenges in their proximity with the ADOT right-of-way.

11 And it does also bring it closer to the
12 residential area here between Van Buren and the I-10,
13 crossing directly in front of those apartments that I
14 mentioned earlier.

15 Q. When you said there's challenges, do you mean
16 that it's more difficult to stay out of the ADOT
17 right-of-way for Alternative 2 and get around the various
18 businesses that are along that route?

19 A. (By Mr. Eich) Yes. It would be a little more
20 difficult, possibly more angles and turns.

21 MR. DERSTINE: Okay. Well, you can see from
22 the slide, we thought this would -- Mr. Eich has
23 presented the various routes. He's described them, as
24 well as the planning process, in terms of how we got
25 here.

1 And we thought this would be a good time to
2 present the flyover simulation to give you an even better
3 understanding of the routes.

4 And the flyover simulation also depicts the
5 corridor width that APS is requesting for these various
6 routes. So the corridors are of varying widths. And so
7 this is probably the best way to illustrate those -- the
8 corridor widths to the Committee for each of the routes,
9 the preferred and then the two alternatives along I-10.

10 And again, the remainder of the project is the
11 same and in common from that 143rd alignment for the rest
12 of the project.

13 Do you want to cue it up, Mr. Trenter.

14 MR. TRENTER: There it is. There we go.

15 Yeah, I was going to say, one thing, on the
16 back of the placemat, you will see this graphic that has
17 the corridor map, and it has the widths of the corridor
18 as well as you'll see a dashed line that runs along the
19 freeway north of the interstate. That dashed line is the
20 extent of the controlled access. And that will be
21 important in this discussion as I fly through.

22 MEMBER HAMWAY: What access?

23 MR. TRENTER: The controlled access. So ADOT
24 has -- within the right-of-way have controlled access.

25 Q. BY MR. DERSTINE: While you're mentioning that,

1 ADOT has submitted a letter, and it's found at APS-23.

2 A. (By Mr. Trenter) Correct.

3 Q. In advance of that, let me see what -- I don't
4 know the date. Let me pull it up and I can tell you.

5 There's a letter under APS-23 that's dated --

6 A. (By Mr. Trenter) September 21st, I believe.

7 Q. Correct, September 21.

8 And then also collected under APS-23 is an
9 email.

10 A. (By Mr. Trenter) Correct.

11 Q. And that was dated September 30.

12 So take us back. Even before the September 21
13 letter and the September 30 email, you and Mr. Eich have
14 had ongoing meetings and discussions with ADOT. Kind of
15 take us through that process.

16 And in general, this goes to the fact that ADOT
17 has concerns with the construction of the transmission
18 line within its right-of-way or controlled access. We've
19 been working with them to give them an understanding of
20 the project.

21 Kind of tell us where -- well, a bit of your
22 discussions over time and where we ended up with ADOT to
23 the best of your knowledge.

24 A. (By Mr. Trenter) Certainly. We started with
25 the field investigation with ADOT staff. We went and

1 evaluated the alternatives located on both sides of the
2 interstate.

3 In particular, as Mr. Eich had mentioned, they
4 had concerns at the crossing being away from the major
5 intersections. They also -- as stated earlier, they did
6 not want us to be within the controlled access.

7 There's also a segment of the project that's
8 along Agua Fria River that would be across ADOT
9 right-of-way but not within the controlled access.

10 And as a point of clarification, when we sent
11 out an Exhibit H letter to document any kind of change in
12 plans, they indicated that they didn't want to have
13 longitudinal poles along the interstate. So we followed
14 up again to clarify to make sure that that was talking
15 about the controlled access.

16 So we presented part of our virtual tour to
17 show them exactly where -- we shared the corridor map
18 with them as well and said, "Here's what the plan is, and
19 this is our intent." And they took some screenshots from
20 our virtual tour, shared it with their staff, and then
21 came back with the email that they had sent, the last
22 correspondence.

23 Q. So the September 21 letter states -- and this
24 is from Raul Amavisca. And I'm just jumping kind of to
25 the upshot of his letter.

1 It says: "Upon initial review, ADOT would like
2 to relay that we would not allow a longitudinal
3 installation within our I-10 right of way."

4 Can you tell me what that means?

5 A. (By Mr. Trenter) So that's where we needed a
6 bit of a point of clarification because the controlled
7 access, the way that we have the corridor -- we have 200
8 feet extending north of the controlled access that would
9 include the ADOT right-of-way, and then we have 100 feet
10 south of that controlled access. And the 100 foot south
11 of the controlled access is for aerial crossings.

12 So I'll show you in the fly-through, when we
13 get by Dysart and Litchfield Road, it's very constrained.
14 And when we have to locate structures across, we may have
15 to cross some of that controlled access aerially with a
16 span, not physical structures within the right-of-way.

17 CHMN. KATZ: And it's Mr. Trenter that's been
18 discussing this with us. I just wanted to make sure the
19 record reflected that.

20 Please feel free to go ahead, Counsel.

21 Q. BY MR. DERSTINE: So looking at the September
22 30 email, so this email, I guess, follows up a
23 conversation we had or that you and Mr. Eich had with
24 Mr. Amavisca after they sent this September 21 letter.

25 And his email of September 30 says: "ADOT

1 Central District understands that APS may need to do an
2 aerial crossing of I-10 and accepts this need."

3 What does that mean?

4 A. (By Mr. Trenter) That would refer to the two
5 crossings that we had sited with them in the field
6 earlier.

7 Q. That's where we're crossing I-10?

8 A. (By Mr. Trenter) Yeah.

9 Q. And then this idea of poles within the
10 longitudinal part of their right-of-way, do we have any
11 plans to place structures within the longitudinal portion
12 of the right-of-way or their controlled access?

13 A. (By Mr. Trenter) Not that I'm aware of.

14 Q. Okay. But we are -- we may need to encroach
15 upon the controlled access with an aerial easement. And
16 what you mean by that is the actual conductor. The lines
17 may extend in the controlled access even though the poles
18 and the structures will not be within that area, right?

19 A. (By Mr. Trenter) That is correct.

20 Q. Is there a difference between -- I guess
21 between right-of-way and controlled access, or are they
22 one and the same?

23 A. (By Mr. Trenter) No. They could vary. And a
24 good example would be in Scottsdale along the interstate.
25 You'll see a series of 69kV poles. They're within the

1 ADOT right-of-way but outside of the controlled access.
2 They're up on the bank when you drive north in
3 Scottsdale. So we've worked with ADOT before siting
4 these facilities within their rights-of-way but not in
5 their controlled access.

6 Q. And an example of the difference maybe between
7 controlled access and the right-of-way for this project
8 would be within the Agua Fria River, right?

9 A. (By Mr. Trenter) That's correct.

10 Q. So within the river, for whatever reason,
11 that's ADOT right-of-way. They own that, but it's not
12 controlled access there because it's not in proximity to
13 the I-10 traffic pattern?

14 A. (By Mr. Trenter) That's correct.

15 Q. Go ahead and take us through the virtual tour,
16 and I think that will be a good way for the Committee to
17 see and understand. And if you can, as you move along
18 through the tour, indicate the -- you know, the corridor
19 widths and where the controlled access is and
20 right-of-way wherever that's applicable.

21 A. (By Mr. Trenter) And I think one other thing I
22 would say for the record is that, for this particular
23 project, the majority of the controlled access is
24 coincident with the edge of the right-of-way and the edge
25 of the fenceline on the ADOT right-of-way. So when we

1 fly over, you'll see the fenceline. And for most areas,
2 it is the same as the controlled access.

3 Q. So for most of those areas, right-of-way and
4 controlled access are one and the same?

5 A. (By Mr. Trenter) Yes.

6 MEMBER HAMWAY: Mr. Chairman.

7 CHMN. KATZ: Yes.

8 MEMBER HAMWAY: When we were in Kingman, we had
9 a hearing. Obviously, it was Tucson Electric. But there
10 was an issue about putting it in the ADOT right-of-way,
11 and so we just avoided that completely.

12 And then, after the hearing, we got an update
13 of -- I don't know if it was that they updated the
14 statute or -- and I can't find it on my phone. I have no
15 idea exactly what it was except for the fact that it said
16 that this Committee -- you can site lines in ADOT's
17 right-of-way.

18 Are you familiar -- this would have come out in
19 May, and it was a new ruling by ADOT. Are you familiar
20 with what I'm talking about?

21 MR. TRENTER: I'm not familiar with that
22 ruling, but I would say the siting of the 69 line we did
23 with them was probably a decade ago. So it's been a
24 practice that through cooperation, as long as you don't
25 affect their maintenance within the right-of-way, they've

1 given us rights-of-way before within their -- or
2 easements within the right-of-way.

3 CHMN. KATZ: And just for the record, that was
4 Member Hamway that had that last question.

5 MEMBER HAMWAY: Thank you.

6 Q. BY MR. DERSTINE: And I guess to that point,
7 ADOT's concern is having poles, structures, within some
8 proximity to traffic that's their controlled access area
9 because that poses kind of an unsafe condition generally.
10 But there are times where ADOT's right-of-way may extend
11 well beyond the traffic flow and even the shoulder of the
12 freeway, in this case, I-10.

13 And in those instances, you could put a
14 structure outside of their controlled access but still
15 within their right-of-way, and it wouldn't pose,
16 necessarily, a serious safety risk or concern, correct?

17 A. (By Mr. Trenter) Yeah, that's correct. And,
18 as a matter of fact, that's the situation we have at the
19 Agua Fria River. They have a parcel that extended out
20 1,000 feet beyond the right-of-way or their controlled
21 access, and that's where we'll be asking for an easement
22 across.

23 Q. But as a general matter, I gather that ADOT is
24 not going to allow us to put poles within, you know,
25 close proximity to traffic flow and/or within the

1 shoulder of a road just for safety concerns?

2 A. (By Mr. Trenter) Yeah. And that's the purpose
3 of a controlled access.

4 Q. Gotcha.

5 A. (By Mr. Trenter) We'll be starting the virtual
6 tour at the Agua Fria River with the preferred route.
7 And as a point of orientation, I'll go back of the
8 graphic.

9 What we're going to do is start here at the
10 Agua Fria River, go along the interstate, south on
11 Bullard into of the substation, back out on 145th, 143rd,
12 back on Van Buren, back to the connection at the Rudd and
13 the Agua Fria.

14 Q. So the big yellow or orange block that we're
15 seeing on the screen where you're about to start the
16 flyover, that's the large 700-foot block that we're
17 seeing on the back of the placemat that shows the
18 corridor within the Agua Fria River. Do I have that
19 right?

20 A. (By Mr. Trenter) Yes, that's correct. And
21 also, as a point of reference, I just clicked in the
22 PLS-CADD of the structures and the approximate location
23 of the right-of-way of the structures -- or the
24 centerline of the structures, rather.

25 Q. What does that mean, PLS-CADD?

1 A. (By Mr. Trenter) PLS-CADD is a software that
2 transmission line engineers use to lay out and design
3 transmission line spans and structures. And then we took
4 that information, and we imported it into Google Earth
5 into the 3D model so we could show it as a 3D rendering.

6 Q. Thank you for that.

7 A. (By Mr. Trenter) Yeah.

8 The intent is to span the river. The first
9 area that we're coming up to -- this would probably be a
10 good place. To bring that point of the controlled access
11 home, you can see this fenceline on the back of the
12 commercial. That would be the edge of the right-of-way
13 and the edge of the controlled access, and our structures
14 are located outside of that controlled access.

15 And as we move forward, you will notice that
16 when we get to Dysart, this is one of the areas that is
17 fairly congested and may require aerial easement. So
18 what we're talking about in that instance is trying to
19 locate a structure that would be able to span to the next
20 structure. And some of this parcel here, which is
21 controlled access, there may be a need to have an
22 overhang over that parcel as an aerial easement.

23 And along ADOT, the right-of-way, we have 200
24 foot north of that fenceline as part of the corridor and
25 then 100 foot south for a 300-foot total width for the

1 corridor.

2 Q. So the corridor width is indicated here by the
3 colored swath, in this case the yellow or the burnt
4 orange. And I notice that the corridor extends to the
5 north and overlaps some of the structures there.

6 Can you explain why that is?

7 A. (By Mr. Trenter) Yeah. In this particular
8 case, we had that siting -- and, again, it's for design
9 purposes. You will see that there's some of the
10 notification of structure signage and what have you, and
11 being able to -- be able to site in those areas may need
12 a little bit of a wider corridor.

13 Q. You're talking about these large signs that are
14 raised at a fairly high elevation so that they can be
15 seen from I-10?

16 A. (By Mr. Trenter) Yes.

17 Q. The concern would be that you need flexibility
18 to move the structures maybe further to the north to get
19 around those large signs or monument signs; and for that
20 reason, we're asking for that -- the corridor width
21 extend further to the north to allow for that final
22 design. Do I have that right?

23 A. (By Mr. Trenter) Correct.

24 Q. Okay.

25 A. (By Mr. Trenter) And we'll continue along

1 Interstate 10 until we get to our first simulation, which
2 will be at the crossing at 143rd.

3 Q. When you say "simulation," we're looking at
4 simulated pole structures, but you're talking about a
5 simulation of what the Committee is used to seeing in
6 terms of visual simulation, a photograph and then the
7 structures are depicted within the existing condition; is
8 that right?

9 A. (By Mr. Trenter) Yes, that's correct. And
10 they are Exhibits G-6 through 11 in the application.

11 And this is -- I'll stop at this particular
12 location as well because this is another area where --
13 again, a controlled access and a potential aerial
14 easement. Anytime we get close to a major intersection,
15 it's going to take additional design, and trying to get
16 through that intersection may require an aerial easement.

17 And one more point of reference. These parcels
18 that we're looking at here are the ones that are owned by
19 the City of Goodyear. And that will be shown on the
20 existing land use maps as well.

21 We're coming up to the 143rd Avenue crossing,
22 and this is our first simulation. The viewpoint is
23 looking to the west at the crossing, and we'll be making
24 our way over to Bullard Avenue.

25 This is the existing setting, existing

1 condition.

2 And I guess a point of reference, too, you can
3 see down in the corner where I have my pointer, this is
4 the edge of the controlled access and the edge of the
5 right-of-way. And then you have the vacant, which is the
6 City of Goodyear property.

7 And in this simulation, we're showing the
8 double-circuit 230kv line crossing the interstate and as
9 it moves past the crossing and moves into a
10 single-circuit structure.

11 Q. Can you -- that transitions to the simulated
12 visual of the new project pretty quickly.

13 Can you back up just a bit and show the
14 existing condition and then the transition to the -- to
15 the new -- simulated new project.

16 So there it is as it looks today?

17 A. (By Mr. Trenter) Yep. And there's the
18 simulated condition.

19 And now we'll be moving to the south side of
20 the interstate. And, again, you can see we have a
21 300-foot corridor 200 foot south of the controlled
22 access, which, again, it's pretty easy to see here. And
23 this is what ADOT was talking about. They didn't want to
24 see a series of structures in this access, controlled
25 access.

1 And now we'll be turning south on Bullard
2 Avenue. And as we start south on Bullard Avenue, we'll
3 be on the east side of Bullard Avenue to Van Buren.

4 And for this section, we have a 400-foot
5 corridor, 200 feet on either side of the centerline of
6 Bullard Avenue.

7 South of Van Buren, we transition to the west
8 side of the road.

9 And we have another simulation looking at the
10 consolidation of the existing -- I'll stop it here.

11 Here's an existing 69kV line that was talked
12 about earlier that would feed the existing substation for
13 the Compass data site.

14 And this is the simulated condition. And we
15 have a single-circuit 230kV component on top of the
16 structure. And then on the bottom half, we have the 69kV
17 component consolidated on the same structure.

18 Q. I notice that in that simulation, the existing
19 69 structure went away and the new collocated 230 with
20 the 69 was a little further to the south.

21 Is it the case that the collocation of the 230
22 with the existing 69, does that allow for longer span
23 lengths so that you have less structures along Bullard
24 Avenue?

25 A. (By Mr. Trenter) That's my understanding, yes.

1 Q. Okay. But the structures will be taller in
2 order to accommodate the two circuits, right?

3 A. (By Mr. Trenter) Yes, absolutely.

4 And now we'll be proceeding to the substation.
5 Let me back up a second.

6 So this is a pretty good view of -- as we
7 approach the substation, this is where Mr. Eich had
8 talked about needing double-circuit structures coming in
9 and out of the substation. That's some of the bus work
10 here at the substation right here.

11 So we would be coming down on the east side of
12 Bullard Ave and then coming over to the west into the
13 substation with one circuit, coming back out of the
14 substation with another circuit, crossing, and then
15 continuing on.

16 And at this point, we'll be on the back side of
17 some of the commercial developments. And I believe there
18 was a question previously about the height of these
19 facilities. That gives you a pretty good idea of the
20 heights that we'll have along there.

21 And at this point, we're heading north back to
22 Van Buren.

23 And this particular area is an area of
24 importance.

25 We had an original alignment that went up

1 145th. But at the request of -- this is a City of
2 Goodyear complex, fire, library, etc. They requested
3 that we locate the facilities along 143rd Avenue
4 alignment over here. And there's another data site
5 that's coming over on this side of the property over
6 here.

7 And now we're moving along the north side of
8 Van Buren. We are heading in an easterly direction. And
9 this whole length of the alternative, preferred
10 alternative, we'll be collocating the existing 69kV line
11 on the 230kV structures.

12 And here we are at a 150-foot right-of-way
13 corridor.

14 This is the -- this is the view on Van Buren.

15 And I wanted to stop it here to show this is a
16 pretty good idea of what it looks like along Van Buren
17 right now the existing structures with the 12kV
18 underbuild on them as we -- this is a view looking to the
19 west close to Dysart Road -- Litchfield Road, excuse me.

20 Q. You said that's 12kV underbuild?

21 A. (By Mr. Trenter) Yeah.

22 Q. Does the 12kV underbuild stay there with the 69
23 and then the 230?

24 A. (By Mr. Trenter) No, it will not.

25 MEMBER PALMER: Chairman.

1 I guess -- I guess that begs the question, what
2 happens to the current 12kV? Does it just go away, or is
3 it going to be a separate structure?

4 MR. EICH: No. I believe that the 12kV would
5 be undergrounded.

6 CHMN. KATZ: That was Mr. Eich.

7 MR. EICH: Yes.

8 A. (By Mr. Trenter) And then the simulated view
9 now, this is where we have the consolidation. And as
10 stated previously, you'll see that the structures are a
11 little bit taller; but there's not as many structures,
12 and the 12kV is buried underground.

13 Continuing on Van Buren, we're on the north
14 side of Van Buren heading towards Dysart Road. I'll have
15 another simulation.

16 And this -- again, here's an example of where
17 we have the existing 69kV facilities on the north side of
18 the road. That would be collocated with the future -- or
19 future 230kV facilities.

20 And we're looking east.

21 And this is the simulated condition. And you
22 can see where you have the underbuild of the 69kV on the
23 230kV structure.

24 MEMBER HAENICHEN: Mr. Chairman.

25 How tall are those structures, the simulated

1 ones?

2 MR. EICH: The simulated ones, I don't -- I'm
3 not sure if I got an exact height, but we anticipate the
4 ones along Van Buren here to be approximately 130 to 140
5 feet.

6 A. (By Mr. Trenter) And now we're coming back to
7 the river, Agua Fria River, and then reconnecting with
8 APS's White Tanks line.

9 And for the alternatives, we're just going to
10 look at the portions that are not common to the preferred
11 route.

12 So this first part of the tour will be similar
13 to what we saw for the preferred route.

14 I'm stopping it here on the tour so you can --
15 there's a couple of issues that we talked about for
16 Alternative 1.

17 Crossing the interstate -- and there will be a
18 simulation that shows that as well. But this is the
19 apartment complex on the south side of the interstate.
20 This is the Desert Sage apartment complex. There's also
21 a church and a school over here. And this is a car
22 dealership. And then there's a RideNow. And then
23 there's also another auto mechanic facility as well.

24 Q. BY MR. DERSTINE: So for Alternative 1, it
25 looks like we're going to -- once we cross the I-10 from

1 the north back over to the south, you're going to have to
2 put some structures in the parking lot for that car
3 dealership?

4 A. (By Mr. Trenter) Yes.

5 Q. And that's because we have to keep them, again,
6 out of the controlled access for the ADOT for I-10?

7 A. (By Mr. Trenter) Yes. And you can see right
8 here, it's pretty clear that edge of the controlled
9 access and right-of-way for ADOT.

10 And this would be the Exhibit G-7 simulation.

11 This is the crossing at Central Avenue. And
12 this shows the simulated condition, again, going from a
13 single- to a double-circuit structure at the crossing as
14 stated before.

15 Q. I guess this shows the distinction between the
16 preferred and the Alternative 1. And then on the
17 preferred, you're in that vacant land to the north here
18 where you're having to put the structures in that car
19 dealership, at least up to this section that we've
20 transitioned into agricultural land, right?

21 A. (By Mr. Trenter) You bet. And we keep that
22 300-foot corridor, 100 foot in controlled and 200 feet
23 south into that ag land, along the interstate.

24 Q. Have we received any objections either from the
25 car dealership or from the owner of this agricultural

1 land to placing these structures on their property to
2 your knowledge?

3 A. (By Mr. Eich) This is Stephen Eich.

4 We did reach out to some of those businesses
5 and have not received any written information from them.
6 Verbally, a little bit of pushback from some of the
7 owners along there, but nothing officially written from
8 them.

9 Q. But they would have received all of our
10 newsletters and outreach, correct?

11 A. (By Mr. Eich) Yes.

12 Q. Okay.

13 A. (By Mr. Trenter) And I will finish up with
14 Alternative Route No. 2.

15 And for this alternative, we start on the south
16 side of the interstate, and it remains on the south side
17 for its entirety.

18 Again, just to show where the edge of that
19 access is, it's right here.

20 And this is a 1,400-foot corridor requested
21 across the river.

22 This was an area of importance. This was -- or
23 is -- currently is an ADOT maintenance yard. We showed
24 that to them when we met with them. The plan right now
25 would be to span that facility.

1 This particular area of where we come to Dysart
2 Road, you can see there's quite a bit going on. There's
3 a berm right here that's within the existing ADOT
4 right-of-way and controlled area that we had to work
5 around.

6 There's some signage. There's a restaurant
7 right here.

8 We need a wider corridor -- we're requesting a
9 wider corridor because we may have to work around some of
10 these buildings if this route was selected. That's one
11 of the main reasons that this route was the second
12 alternative, was because there is quite a bit of
13 congestion we try to work around, while at the same time
14 trying to stay out of the ADOT controlled access.

15 Q. Just thinking back to Member Grinnell's
16 question about the two alternatives to the preferred
17 route, is there a good reason, or what would be the
18 selling point for this Alternative 2 in comparison to the
19 preferred route?

20 Is there anything that's better about this
21 route that you can speak to?

22 I guess the one point I can see is that there's
23 not a crossing, right? We're not crossing I-10.

24 A. (By Mr. Trenter) That would be the one -- I
25 was looking for if there was something else, but I would

1 say that would be the limitation.

2 Q. Okay.

3 A. (By Mr. Trenter) You bet.

4 And stopping the tour right here, I wanted the
5 Chairman and Members to see this is the Desert Sage
6 apartment complex. We will have a simulation coming up
7 that's looking from back, looking towards the interstate,
8 to see what you can see, but this was another area of
9 concern.

10 And next we'll be showing Exhibit G-8. So this
11 is on the cul-de-sac just behind the apartment complex
12 that we saw from the front view.

13 And then the simulated condition showing the
14 structures and the span.

15 And, again, this apartment complex is on the
16 south side of the interstate. Our line is on the edge of
17 that right-of-way.

18 There's actually -- and we'll go back to the
19 tour, but there's an easement for Goodyear water
20 treatment facility that this line would have to be
21 located in. That's what I'm indicating right here, that
22 easement. So we're not in the controlled access with the
23 route because there is an easement to get to that water
24 treatment facility.

25 Q. Is it along -- we've probably already passed

1 the Alternative Route 2. This route is the one that
2 we're going to -- you're likely to need the aerial
3 easement where the circuit is going to hang over the
4 controlled access at one or more locations; is that
5 right?

6 A. (By Mr. Trenter) Yeah. I would say, in
7 particular, at the intersection where we had the
8 restaurant and we had all the development going on and
9 the berm that I pointed out. You bet.

10 Q. That was Dysart?

11 A. (By Mr. Trenter) Yeah.

12 And then this is similar to what we've seen
13 before, moving up to 143rd Ave, where they're common.
14 And that would be the end of the route tour.

15 Q. Is there anything that you wanted to mention or
16 emphasize that we saw to the Committee, that we saw on
17 the route tour?

18 A. (By Mr. Trenter) No, the only -- the only
19 thing I guess I would mention is there was the question
20 on why we had a couple of different alternatives.

21 And at first, there were a couple different
22 competing interests, I would say, on the Goodyear -- and
23 we'll get into the details a little bit further into the
24 testimony. But at one point, Goodyear had looked at
25 those open parcels as being opportunities for recreation

1 and maybe even a wellness park.

2 And so when we were moving through this
3 process, we were trying to see if we could, for example,
4 with Alternative 1, locate a structure or two in the
5 controlled access and have that be more of a preferred
6 route than the potential part.

7 But as the process and as we moved through,
8 came to find out that ADOT was pretty firm on no
9 structures within the controlled access. And then we
10 found out the City of Goodyear no longer had plans for a
11 proposed park on those parcels.

12 And as we'll see in Ms. O'Neil's testimony, it
13 actually -- it's now slated for business commerce, so
14 it's much more of a compatible use.

15 Q. So I guess, getting back to Member Grinnell's
16 questions about why we brought forward these
17 alternatives, it sounds like at one point in time, the
18 City of Goodyear indicated they had plans for those open
19 parcels that -- as you mentioned, a wellness center and
20 maybe recreation, that we considered, well, maybe this
21 isn't -- we maybe need an alternative, one or more
22 alternatives, that take the line off of those parcels for
23 the Committee to consider. But since then, the City has
24 changed its development plans for those parcels, and
25 that, I guess, kind of solidifies the reason why the

1 preferred route remains probably the best route?

2 A. (By Mr. Trenter) Yes. And I would even say
3 because they haven't been developed yet, they would have
4 more of an opportunity to plan around the proposed
5 project.

6 Q. Thank you.

7 A. (By Mr. Trenter) You bet.

8 MEMBER LITTLE: Chairman, I have a question.
9 This is Toby Little.

10 CHMN. KATZ: Go ahead.

11 MEMBER LITTLE: Historically, have there been
12 issues with crossing the freeways, those crossings,
13 either in construction, reliability issues later on,
14 costs?

15 MR. WILEY: It is common practice for APS to
16 have to cross major intersections and highways such as
17 the I-10. And I'm not aware of any issues pertaining to
18 reliability or cost in such crossings.

19 MEMBER LITTLE: Thank you.

20 MR. DERSTINE: That was Mr. Wiley.

21 CHMN. KATZ: Yes.

22 MR. DERSTINE: Well, we're at the end of the
23 flyover simulation. Is this a decent time to take our
24 second afternoon break? I know we are close to the end
25 of the day, but I could use a break.

1 CHMN. KATZ: I think it would be a good time
2 for a break. I don't know whether we want to resume at
3 all.

4 The public comments is not until 5:30, and I
5 don't know that we're going to have a large audience for
6 that.

7 MR. DERSTINE: We've got a couple fairly short
8 sections that we can cover during the time. Or if we
9 want to just adjourn for the day, if that's your
10 pleasure.

11 CHMN. KATZ: It really doesn't make any
12 difference to me. Do any of the members have any
13 particular comments or concerns?

14 MEMBER GENTLES: Mr. Chairman, if we adjourn
15 for the day, public comment session is at 5:30?

16 CHMN. KATZ: Yes.

17 MEMBER GENTLES: So if we adjourn, how does
18 that work?

19 CHMN. KATZ: If we adjourn this session, we
20 still need to be around for the public -- we would
21 reconvene at 5:30. We could go for another 10, 15 -- we
22 could take a 10- or 15-minute break and then come back
23 for 10 or 15 minutes.

24 MR. DERSTINE: Yes. Because I am told the AV
25 team will need 20 minutes or so to switch over and get us

1 cued up for the public comments session at 5:30. So we
2 need to stop somewhere close to 5.

3 But we can take our break, and we will do a
4 couple short sections and utilize our time as best we
5 can.

6 CHMN. KATZ: Carolyn, do you have any
7 preference?

8 (The reporter shook her head in the negative.)

9 CHMN. KATZ: Let's make it about a ten-minute
10 break, and then we can go on for maybe another 20 minutes
11 or so and then relax until the public shows up, if they
12 do at all.

13 (A recess was taken from 4:31 p.m. to
14 4:49 p.m.)

15 CHMN. KATZ: Counsel.

16 Q. BY MR. DERSTINE: All right. Mr. Eich, this
17 next section we're going to cover, corridors and
18 right-of-way, I think the flyover simulation and
19 Mr. Trenter's narration of the flyover did a good job of
20 identifying the corridor widths and where they vary,
21 where they are, and what they are.

22 But if you can just cover the corridors for the
23 three routes at kind of a high level.

24 A. (By Mr. Eich) Sure. We are requesting a
25 variable-width corridor as you saw during the flyover.

1 That varies from approximately 150 to 400 feet for the
2 most part, at least for the preferred right-of-way
3 corridor. And it is wider in the river areas because of
4 the difficulty of the terrain in the riverbed.

5 And that width is dependent on the closest
6 structure -- the next closest structure to -- for
7 example, on this preferred corridor, our closest
8 structure is approximately in this location here. So the
9 width goes up to that nearest structure to allow some
10 opportunity for design to make sure we have a good
11 location of our cut-in structure to our existing line.

12 Q. And I think when we get to the structures
13 themselves, you're going to show that we're going to have
14 to get underneath at least one line there, and so that
15 also, you know, is part of the complexity of figuring out
16 the right placement. And that's one of the reasons why
17 we're asking for the wider width in that -- in the
18 riverbed area, right?

19 A. (By Mr. Eich) Yes. Yes. And you may have
20 seen the meandering streams and just the different
21 topography and terrain in there making it a little more
22 difficult.

23 So we are asking for, at this point in the
24 river, where we connect to our line north of the 10, that
25 right-of-way width would be 800 feet.

1 And as I'm explaining this, Mr. Trenter pointed
2 out that dashed line which represents the access control
3 line of ADOT, where, with our corridor widths, it would
4 be consistently overlapping that access control line by
5 100 feet. So I'll just give the general corridor width,
6 and just know that it would include 100 feet overlap of
7 that access control line.

8 So we would begin in the river on the preferred
9 route with an 800-foot-wide corridor. As we cross the
10 river, it would narrow to 300 feet wide.

11 As we continue to follow along the ADOT access
12 control line to the west to the 143rd Avenue alignment,
13 where it would then cross to the south and then continue
14 west on the south side of the I-10 at that same
15 300-foot-wide corridor.

16 Once we get to Bullard Road, the corridor would
17 widen to 400 feet, being 200 feet on each side of the
18 centerline of Bullard Road. Although our intent, again,
19 would be to keep the line on the east side, we will have
20 to cross to the west side before we get to Van Buren at
21 some point.

22 And once we get to the south side of Van Buren,
23 the corridor would narrow to 200 feet wide. And that
24 would be based, again, on the centerline of Bullard Road.
25 It would be the west of that centerline, the west 200

1 feet, and then we would continue down to actually the
2 north line of our Bullard Substation parcel.

3 At that point, the corridor would widen to 400
4 feet and continue west into the customer datacenter site
5 and into our Three Rivers Substation.

6 Going back to Bullard Road, the corridor would
7 be 300 feet as we headed east using this parcel line as
8 that 150 on each side.

9 Once we get to 143rd Avenue, we would continue
10 north at 150 feet wide, using the centerline of 143rd
11 Avenue, and that would be the west 150 feet of that
12 centerline.

13 We would then continue back to the 145th
14 Avenue, the corridor would widen to 300 feet here, 150
15 feet north and south of this parcel line to 145th Avenue,
16 where it would then narrow to 200 feet, being the west
17 side of the central line of 145th Avenue.

18 We would continue north to East Van Buren
19 Street. And then from the centerline of East Van Buren
20 Street north, it would be 150 feet wide where we would
21 follow that Van Buren alignment on the north side clear
22 to the river, where it would then widen to 1,200 feet at
23 the river. Again, that's based on the nearest structure
24 in the river of our existing 230kV line.

25 Q. So you need the wider corridor when you're

1 coming back on Van Buren because the nearest structure is
2 1,200 feet away from that crossing?

3 A. (By Mr. Eich) Yes.

4 Q. And explain to me again, why -- why are we
5 needing it to be on a 200-foot corridor on either side of
6 the centerline on Bullard if the intent is to be on the
7 west side and collocated with the existing 69?

8 A. (By Mr. Eich) Without final design, we felt
9 that it would be good to have both sides of this Bullard
10 Road here. Again, we will, eventually, have to cross to
11 the west where that location is, though. That is yet to
12 be determined and surveyed.

13 Q. And why do you have to cross to the west?

14 A. (By Mr. Eich) There is an existing 69kV line
15 here that we would need to rebuild and collocate on the
16 west side of Bullard Road.

17 MEMBER GRINNELL: Mr. Chairman.

18 CHMN. KATZ: Yes. Go ahead, Member Grinnell.

19 MEMBER GRINNELL: On all the corridors, are the
20 right-of-ways incorporated into those corridors? In
21 other words, are you going to have to ask for additional
22 rights-of-ways from either property owners, the State,
23 the City, or anybody else?

24 MR. EICH: Member Grinnell, the right-of-way is
25 not determined yet. The corridor widths are wider than

1 the right-of-way needs so that we have the flexibility to
2 acquire the proper rights-of-way within those corridors
3 at the time of survey and design.

4 MEMBER GRINNELL: So we won't have to come back
5 and readdress this issue, is my point. With the approved
6 corridors, you will have plenty of room for right-of-way
7 acquisitions and requests, correct?

8 MR. EICH: Yes, we should have plenty of room.

9 MEMBER GRINNELL: Thank you.

10 CHMN. KATZ: And from the Chair, I don't think
11 we'll have to revisit this as long as those corridors are
12 within what we all concur to.

13 Q. BY MR. DERSTINE: All right. That's the
14 corridor for the preferred route and the right-of-way.

15 Do you want to move on to the alternatives?

16 A. (By Mr. Eich) Yes.

17 The Alternative 1, I can quickly get through
18 this because it shares, again, much of the preferred
19 corridor.

20 It would start again at the same location on
21 the north side of the I-10 with the same widths as we
22 proceed west. However, since it will cross at the
23 Central Avenue alignment, this is where it starts to
24 change.

25 The crossing will still remain at 300 feet

1 wide. Once we get to the south side of the I-10 and
2 begin to proceed west, the corridor would be 250 feet
3 wide up until we reach Litchfield Road. That narrow
4 corridor is largely because of the development that's
5 already out there. We know a little more fully of what
6 we would be able to do there.

7 From Litchfield Road, the corridor expands to
8 300 feet and continues on to that 143rd Avenue alignment,
9 at which point the remainder of this corridor would
10 follow the same alignment as the preferred corridor.

11 Q. Okay.

12 And Alternative 2.

13 A. (By Mr. Eich) Alternative 2 would begin on the
14 south side of the river. And the width of that is 1,400
15 feet wide, again, based on that existing transmission
16 structure.

17 As it crosses the river, it would quickly
18 reduce to 500 feet wide, and it would narrow gradually to
19 Dysart Road to about 300 feet wide.

20 And then from Dysart Road to just past the
21 hotel, it would be -- it would go back to approximately
22 450 feet. Again, the reason here being the complexities
23 of the existing businesses, to ensure that there is
24 enough flexibility to design around or to design that
25 line.

1 Once we get past that hotel, the corridor would
2 then narrow to 250 feet and continue west, following the
3 same route as the Alternative 1.

4 Once we get to Central Avenue all the way to
5 that common point of 143rd Avenue, it would follow the
6 same alignment as Alternative 1. And then once we get to
7 that 143rd Avenue, it would follow both the Alternative 1
8 and the preferred corridor.

9 Q. And the right-of-way width that we're
10 requesting for each of the routes?

11 A. (By Mr. Eich) So the right-of-way width we are
12 requesting is a variable width up to 120 feet.

13 Q. Now, in certain portions, you stay along
14 Van Buren. APS has the right to build in the road
15 right-of-way under your franchise agreement. But I think
16 our preference is still to obtain an easement wherever we
17 can; is that right?

18 A. (By Mr. Eich) That is correct.

19 Q. All right. Does that cover everything you
20 wanted to cover for corridors and rights-of-way?

21 A. (By Mr. Eich) Yes, it does.

22 Q. I think this is probably the right time for you
23 to explain to the Committee why the preferred route is
24 the best route and emphasize those characteristics of the
25 preferred route that you think are in its favor.

1 A. (By Mr. Eich) I have listed the reasons of
2 this being the preferred route, some of which I'll get
3 into further in my testimony probably tomorrow.

4 But the preferred route follows the alignment
5 that's supported by the majority of the public and the
6 stakeholders.

7 As discussed today, it minimizes residential
8 visual impacts and is also -- it results in the smallest
9 number of landowners directly affected by the project.
10 And it also minimizes the commercial property impacts.

11 Q. I guess on that last point, you're comparing it
12 to Alternative 2 where we're having -- or, yeah, where,
13 you know, we're having to put structures in parking lots
14 and that sort of thing and the car dealership. That's a
15 much more significant impact where we're having to take
16 away places for new car inventory for a pole, right?

17 A. (By Mr. Eich) Yes.

18 Q. All right. Let's move on to project costs and
19 the facilities you're going to use to build the project.

20 Let's start out with costs. Can you cover
21 those.

22 A. (By Mr. Eich) Yes.

23 Because each of the alternatives are relatively
24 similar in length, the project costs would be similar for
25 all three. Again, each one is about 700 -- or 7 1/2

1 miles. The right-of-way costs are estimated to be
2 approximately 10 1/2 million dollars. The construction
3 costs are approximately \$18 million with an overall
4 right-of-way and construction cost of approximately
5 28 1/2 million dollars.

6 Q. So there's no significant difference in terms
7 of the overall costs, that is, construction and
8 right-of-way for any of the three routes, the preferred
9 and the two alternatives?

10 A. (By Mr. Eich) No. No significant difference.

11 Q. All right. The facilities, that is, what poles
12 and their design, whatever we're going to use to build
13 the project.

14 A. (By Mr. Eich) Yes. We have a variety of
15 facilities, including steel monopole structures,
16 H-frames, and what we prefer to as cut-in structures.
17 The heights of these structures could range anywhere
18 between 115 and 195 feet depending on the terrain and the
19 different areas that would need to be crossed.

20 However, we anticipate the majority of the
21 height of these poles would range between 125 and 140
22 feet.

23 This image on the right shows what our tangent
24 structures look like. This is a Delta configuration
25 carrying that single 230kV circuit on the top with a 69

1 double-circuit capable underhang underneath. This is
2 also a tangent pole only with a stacked configuration.
3 There may be certain areas that would require it to look
4 like this as opposed to the Delta configuration. These
5 are also found in Exhibit G-1.

6 Q. And what would be the reason to use the Delta
7 configuration, that is, having the conductors on both
8 sides of the pole as opposed to all stacked on one side
9 as you've shown on the right drawing on Slide 122?

10 A. (By Mr. Eich) So the difference would -- the
11 Delta configuration, we could move the arms up higher
12 onto the pole, allowing us to keep the 69 portion up
13 higher as well. With that higher distance from the
14 ground, the poles could be spanned further apart.

15 In this situation, however, the poles -- the
16 arms would be -- the spacing would be wider. Therefore,
17 the 69 portion would be lower, and the spans would have
18 to narrow a little bit.

19 Q. Okay.

20 A. (By Mr. Eich) We also do have dead-end
21 structures, is what we're referring to here in
22 Exhibit G-2. This is a single-circuit dead-end structure
23 and a double-circuit dead-end structure. We refer to
24 these as dead-end structures because they're typically
25 used at the end of the lines. They need to be stouter to

1 handle the tension. Being at the end of the line,
2 they're also used at sharp angles.

3 In particular, this type of pole would be used
4 for a crossing at the I-10. We'd also likely use this
5 type of pole for that double-circuit area just north of
6 the substation.

7 Q. So the tangent structures -- the vast majority
8 of the poles we're going to see would be tangent
9 structures. But where there's an end of the line or
10 where there's a sharp angle, you would be utilizing one
11 of these, the dead-end structures?

12 A. (By Mr. Eich) Correct.

13 Q. Okay.

14 A. (By Mr. Eich) And then to the right, we have
15 examples of our H-frame structure shown as Exhibit G in
16 our application. And this H-frame structure would allow
17 us to hang our 230kV circuit along the top as well as
18 allow us to attach the 69kV portion just underneath. And
19 that comes into play in the river specifically.

20 This is what we call our cut-in structure. As
21 the existing 230kV line connects to these arms, they then
22 drop down to this lower level to this point here, which
23 would allow us to cross underneath any 230 or -- any
24 transmission power lines that are nearby. In this
25 situation, we do have a Tucson Electric Power line which

1 we would have to cross underneath.

2 This picture here depicts this cut-in structure
3 setup quite nicely. And this is almost exactly what we
4 would have to mirror. As we come down with our 230kV
5 circuit from our existing line, we would cross underneath
6 the Tucson Electric Power line and then eventually rise
7 up to this H-frame structure here and continue past,
8 crossing the river.

9 That existing 69kV line in the river can
10 continue perpendicular on this H-frame pole.

11 Q. And is the H-frame used in the river, what,
12 because there's -- you've got -- you're using two
13 structures, so the circuits are being carried by two
14 pylons drilled down into the riverbed, and that's a more
15 sturdy and stable placement of the structure and less
16 likely to get -- be impacted by flooding or conditions of
17 the river?

18 A. (By Mr. Eich) That may be the case. However,
19 I'm not an engineer to know the exact reasons, so I could
20 not comment on that exactly.

21 Q. But the intent would be to use the H-frame
22 structure in the river?

23 A. (By Mr. Eich) Yes. In all of these
24 structures, they would be compatible with the Phoenix
25 Goodyear Airport clearance requirements. The span

1 lengths for these are estimated to be between 500 and
2 1,200 feet on average.

3 Q. Okay. Anything else on the structures?

4 A. (By Mr. Eich) No. That's all I have.

5 CHMN. KATZ: Do you want to consider wrapping
6 it up right now?

7 MR. DERSTINE: I think this is our stopping
8 point with Mr. Eich. Tomorrow we'll start with our
9 testimony from Environmental Planning Group, and this is
10 a good place for us to stop.

11 CHMN. KATZ: Thank you all very much.

12 And do we have any questions from any of our
13 panelists before we break up for the day? Any of our
14 members who are attending virtually, any questions or
15 concerns?

16 (No response.)

17 CHMN. KATZ: Hearing none, we will stand in
18 recess, but we will resume at 5:30 for any public
19 comments that we might receive. I'm not sure if there
20 will be any or not, but we have to at least stay tuned
21 and present to see whether or not the public expresses
22 any concerns. And depending on how many we have, I'll
23 probably limit everybody's comment to maybe three
24 minutes. So, hopefully, we'll get out of here before
25 6:00.

1 Thank you all for your courtesy, and we do
2 stand in recess.

3 (A recess was taken from 5:11 p.m. to
4 5:34 p.m.)

5 CHMN. KATZ: We're back on the record, and this
6 is the time set for public comment. And there was
7 adequate notice given to the community through a whole
8 host of different means.

9 And I don't believe there's anybody in the room
10 that wants to make a comment for the benefit of this
11 Committee.

12 Anybody have any comments?

13 (No response.)

14 CHMN. KATZ: Seeing or hearing nobody that
15 wants to say anything, I'll ask our technical people, do
16 we have anybody on the phone lines other than our
17 Committee Members?

18 AUDIO TECHNICIAN: We are only joined by
19 Committee at this point.

20 CHMN. KATZ: We will call it a day, and we will
21 adjourn until 9 a.m. tomorrow.

22 (The hearing recessed at 5:35 p.m.)

23

24

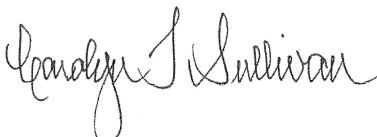
25

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