

TOWNSHIP OF CHATHAM
ZONING BOARD OF ADJUSTMENT

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IN THE MATTER OF: :
 : TRANSCRIPT
CASE NO. BOA 17-95-18.01, : OF
T-MOBILE & VERIZON : PROCEEDINGS
WIRELESS, BLOCK: 95, LOT :
18.01 :
----- :

Wednesday, May 10, 2017
Municipal Building
54 Fairmount Avenue
Chatham, New Jersey 07928
Commencing at 7:33 p.m.

BOARD MEMBERS PRESENT:

TONY VIVONA, Chairman
DENNIS NEWMAN
JON WESTON
TINA ROMANO
RICK WILLIAMS
MICHAEL HYLAND
WILLIAM STYPLE
GREGORY BORSINGER
JOHN C. HURRING, JR.

ALSO PRESENT:

MARGARET SMITH, Secretary
ROBERT A. MICHAELS, Planner
JOHN K. RUSCHKE, P.E.

ALISON GULINO, CCR, RPR
CERTIFIED COURT REPORTER

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A P P E A R A N C E S :

STEPHEN H. SHAW, ESQ.
Counsel for the Board

PRICE, MEESE, SHULMAN & D'ARMINIO, P.C.
Mack-Cali Corporate Center
50 Tice Boulevard
Woodcliff Lake, New Jersey 07677
By: JENNIFER KNARICH, ESQ.
Counsel for the Applicant

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I N D E X

<u>APPLICANT'S WITNESSES:</u>	<u>PAGE</u>
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1 CHAIRMAN VIVONA: T-Mobile and Verizon
2 Wireless, Shunpike Road.

3 We have a site visit report that we
4 will read into the record.

5 MR. BORSINGER: "Board of Adjustment
6 site meeting, April 1, 2017, Block 95, Lot 18.01;
7 300 Shunpike Road, Gloria Dei Evangelical Lutheran
8 Church; BOA 17-95-18.01.

9 Board members present: Mr. Vivona,
10 Mr. Weston, Mr. Borsinger, Mr. Hyland.

11 Professionals present: Steven Shaw, attorney.

12 Applicant's representative present: Jennifer
13 Knarich; Price, Meese, Shulman & D'Arminio and
14 Joshua Cottrell, French & Parrello Associates.

15 On Saturday, April 1, 2017 at 9 a.m.,
16 the above members of the Chatham Township Board of
17 Adjustment visited 300 Shun Pike Road regarding
18 applicant's request for variance for C and D
19 variance application review for proposed permanent
20 wireless telecommunications tower. The following
21 variance have been requested for proposed
22 improvements.

23 Number one, use variance for
24 installation of a wireless communications facility
25 on a residential lot.

1 Number two, minimum allowable setback
2 distance for a cell tower from a residential
3 district, Section 30-99.9.b, 100 feet required, 0
4 feet proposed.

5 Number three, minimum allowable
6 setback distance of an accessory structure, cell
7 tower. Structures accessory to uses other than a
8 one-family dwelling to meet requirements applicable
9 to the principal buildings per Section 30-96.13b.
10 Compliance with Section 30-75.2, minimum rear yard
11 setback distance of 50 allowed, 45 feet proposed.

12 Number four, minimum allowable setback
13 distance of accessory structure, T-Mobile equipment
14 pad. Minimum rear yard setback distance of 50
15 allowed, 17 feet proposed.

16 Number five, maximum allowable height
17 of accessory structure, the cell tower. Structures
18 accessory to uses other than a one-family dwelling
19 to meet requirements applicable to principal
20 buildings per Section 30-96.13.b. Compliance with
21 Section 30-78.8.g.2, maximum height of a principal
22 building required. Maximum height of 35 feet
23 allowed and 150 feet proposed.

24 Number 6, maximum length of panel
25 antennas, Verizon Wireless antennas, Section

1 30-99.9.j, 5 feet required, 6.2 feet proposed.

2 Number 7, maximum width of panel
3 antennas, Section 30-99.9j, T-Mobile antennas, 12
4 inches required, 13 inches proposed.

5 Number 8, maximum width of panel
6 antennas, Verizon Wireless antennas, Section
7 30-99.9j, 12 inches required, 13.8 inches proposed.

8 Number 9, maximum allowable impervious
9 lot coverage in a residential district, Section
10 30-78.11.a, 17,102 square feet allowed, 48,693
11 square feet preexisting corrected from plan. Prior
12 approved coverages to be temporary, 49,083 square
13 feet.

14 Number 10, removal of condition of
15 prior Board resolution requiring reforestation of
16 project site.

17 Number 11, minimum allowable setback
18 distance of accessory structure, Verizon Wireless
19 equipment canopy. Minimum rear yard setback
20 distance of 50 feet allowed and 18 feet proposed.

21 Number 12, minimum spacing between
22 auxiliary structures which house equipment related
23 to antenna, T-Mobile cabinets, Section 30-99.9.i. 5
24 feet required and 3 feet proposed between proposed
25 T-Mobile equipment pad and proposed telco cabinet.

1 Number 13, maximum allowable height of
2 fence, Section 30-96.1S.c.1a, 6 feet required, 8
3 feet proposed.

4 During the visit, the Board members
5 observed an existing approximately 100-foot
6 temporary tower atop a temporary foundation with
7 generator and auxiliary equipment. The tower and
8 equipment were surrounded by a chain-link fence.
9 Members observed an orange-staked area of the
10 proposed boundary for the proposed approximately
11 150-foot tower structure. The new boundary limits
12 were smaller than the existing boundary as defined
13 by the existing fence.

14 The members also observed a purple
15 stake approximately 6 feet from the existing
16 temporary antenna base that represented the location
17 of the new tower.

18 Also observed was a stake on the
19 westerly side of the tower where Mr. Cottrell
20 indicated a new gas line may be installed."

21 CHAIRMAN VIVONA: Thank you.

22 We are good.

23 MS. KNARICH: Good evening, Chairman,
24 ladies and gentlemen of the Board. Jennifer Knarich
25 of Price, Meese, Shulman & D'Arminio on behalf of

1 the applicants, T-Mobile, LLC, and New York SMSA
2 Limited Partnership, d/b/a Verizon Wireless.

3 Before I begin, I want to make sure
4 proper notice has been afforded and you have been
5 provided the requisite proofs.

6 MS. SMITH: Yes.

7 MS. KNARICH: The project site is the
8 Gloria Dei Lutheran Church property at 300 Shunpike
9 Road in the R3 residential district zone, Block 95
10 and Lot 1.801.

11 The co-applicants propose the
12 installation of a 150-foot cell tower at the
13 approximate location of an existing 100-foot
14 temporary cell tower that was described at the site
15 visit that was performed on April 1st. That tower
16 had been approved by this Board back in 2011. This
17 proposed permanent tower would replace the temporary
18 tower that was currently existing and that was
19 required at the time for continuing service for a
20 two-year period with the extensions of the approval
21 granted in 2014 and 2016. During this time, PSE&G
22 is continuing to undertake their transmission tower
23 replacement project.

24 Proposed for T-Mobile is a total of
25 nine antennas at a center line of 146 on the 150-

1 foot tower and are proposing twelve antennas for
2 Verizon Wireless at a center line height of 136 on
3 the 150-foot tower. The tower is also designed to
4 accommodate a third carrier in the future.

5 The subject location of the proposed
6 tower is approximately 4200 square feet of vacant
7 area at the rear of this property and the access is
8 proposed through the existing driveway of the church
9 parking lot to a Transcontinental Gas metering and
10 regulating station located to the rear of the
11 existing church property known as Lot 18.02.

12 Additional accident site work proposed
13 is a 23-by-38-foot-wide gravel parking area and
14 installation of several wireless equipment. This
15 will include with Verizon Wireless a 10-by-20
16 equipment platform with a canopy, a 4-by-20-foot
17 concrete pad proposed for T-Mobile and a Verizon
18 Wireless 20K natural gas generator, which is
19 replacing the proposed 10K that we initially
20 submitted with the application.

21 I believe the noise consultant has been provided
22 with the specs and he submitted a report, which I
23 will get into later in the testimony.

24 We also have multiple equipment
25 cabinets for both co-applicants and installation of

1 an underground electric telephone cable from an
2 existing utility pole located in the access drive.

3 Finally, we have an 8-foot-high
4 security fencing and that was suggested to be
5 lattice slats.

6 I could go through the relief again
7 that was noted in the site visit.

8 CHAIRMAN VIVONA: I don't think we
9 need to do that.

10 MS. KNARICH: We have some waivers.
11 We have an environmental impact statement in
12 accordance with Subsection 30-62.2q of your land use
13 ordinance. We are seeking a waiver for that and a
14 waiver from contours of 5-foot intervals to
15 determine the natural drainage of land and
16 outcroppings giving approximate depths to bedrock,
17 Aquaphor recharge areas including safe sustained
18 ground water yields, wooded areas indicating
19 predominant species and size, location of tree 6
20 inches or more in diameter as measured 1 foot above
21 ground level outside of the wooded area.

22 We are seeking waivers as well from
23 parking and loading space dimension and widths of
24 access drives and aisles as existing. We are
25 seeking a waiver for the natural resource inventory

1 information and the letter of exemption from NJDEP
2 certifying that the proposed activity is exempt and
3 the meets and bounds description of parcel in
4 question based upon current land survey as well as a
5 copy of any protective covenants or deeds applying
6 to the property.

7 I have four witnesses tonight. I have
8 Josh Cottrell, who will be providing expert
9 engineering testimony. I have Mr. Adam Feehan as
10 our radio frequency engineer and Joe Menio for radio
11 frequency compliance and Tim Kronk, who is our
12 professional planner.

13 A few other housekeeping items. We
14 received the engineer's report dated February 7,
15 2017, the planner's report dated March 27, 2017 as
16 well as your noise consultant's report dated April
17 7, 2017.

18 I don't believe there's any other
19 reports?

20 MS. SMITH: No.

21 MS. KNARICH: We also obtained Morris
22 County site plan approval on January 17, 2017.

23 As previously stated, there was a site
24 visit held on April 1st and we also conducted a
25 balloon test on April 22nd. There was, at that site

1 visit, your attorney as well as several Board
2 members but I want to note, for the purpose of the
3 record, I'm not aware of any members of the public
4 that were in attendance for either of those.

5 If there's no questions, I can put on
6 my first witness.

7 CHAIRMAN VIVONA: Okay.

8 J O S H U A C O T T R E L L, first having been
9 duly sworn, testified as follows:

10 MR. COTTRELL: Josh Cottrell, I have a
11 Bachelor's of Science in civil engineering from
12 Rutgers University. Approximately 10 years -- 15
13 years of site plan experience. I have testified
14 before probably close to 80 Planning and Zoning
15 Boards throughout New Jersey. I hold a current
16 professional engineering license in the State of New
17 Jersey.

18 CHAIRMAN VIVONA: Okay. Thank you.

19 DIRECT EXAMINATION BY MS. KNARICH:

20 Q. Go ahead.

21 A. I will go over the proposed and the
22 existing conditions. As we stated, the site is
23 located at Block 95, Lot 18.01. Currently on this
24 site is the church, associated parking and
25 driveways. Towards the rear of the property is an

1 existing temporary telecommunications facility
2 consisting of a 100-foot ballast-mounted monopole
3 with T-Mobile equipment and currently, AT&T
4 equipment. This is sheet SP1. I'll flip to the
5 next sheet. It provides a larger blow-up of the
6 proposed area.

7 This is SP2, compound plan and
8 elevation. These are the revised plans that were
9 submitted.

10 MS. KNARICH: They were previously
11 provided.

12 MR. SHAW: They were received, April
13 14th. That's okay.

14 A. The applicants are proposing to
15 install a 50-by-50-foot fenced compound generally
16 within the footprint of the existing temporary
17 compound. We will install a chain-link fence 8 feet
18 high. Within the compound, we will install a
19 150-foot monopole. T-Mobile will install nine
20 antennas on the monopole and Verizon Wireless will
21 install 12. T-Mobile will install a 4-by-20-foot
22 concrete pad at the base of the monopole with
23 telephone and electric utilities and Verizon
24 Wireless will install a 10-foot-by-20-foot concrete
25 pad with a 10-foot-high canopy overhead. Verizon is

1 located on the northwest corner of the new compound
2 and T-Mobile is in the northeast of the new
3 compound.

4 CHAIRMAN VIVONA: Both those areas are
5 further away from the church as opposed to closer to
6 the church?

7 MR. COTTRELL: Correct.

8 A. We will also be installing underground
9 telephone and electric utility conduits from the
10 existing utility pole. The existing service
11 equipment and overhead wires will be removed. The
12 compounds will be covered with a gravel cover. We
13 are proposing a gravel parking area on the east side
14 of the compound and then Verizon Wireless is also
15 installing a 20-kilowatt natural gas generator so
16 they will be extending an underground gas line to
17 the street back to a new gas meter located adjacent
18 to the compound.

19 CHAIRMAN VIVONA: The generator is
20 emergency power?

21 MR. COTTRELL: Yes.

22 MR. WILLIAMS: Not for air conditioner
23 or cooling or anything?

24 MR. COTTRELL: No. Verizon Wireless
25 will be installing outdoor cabinets so they have

1 internal cooling fans.

2 MR. WILLIAMS: So there wouldn't be
3 noise for the cooling?

4 MR. COTTRELL: There's minimal noise
5 on the equipment cabinets but no air conditioners.

6 MS. ROMANO: Why is it larger now?

7 MR. COTTRELL: Verizon Wireless
8 requirements. They used to have 50K. They reduced
9 it from four years ago.

10 MS. ROMANO: It only runs if the power
11 is out, right?

12 MR. COTTRELL: Yes. But also, test
13 cycles will be once a week during the day and only
14 when conditions permit.

15 MR. SHAW: That would be a condition.

16 MR. COTTRELL: Right.

17 MS. KNARICH: The request was to limit
18 those times between 7:00 a.m. to 10:00 p.m. or
19 something more restrictive if the Board were to
20 restrict the hours more so.

21 Q. You would make that a condition of
22 approval?

23 A. Yes.

24 Q. Could you go back to the first page? I
25 would like to show the access.

1 A. Access to the church, there's ingress
2 and egress from Shunpike Road. To the rear of the
3 church, there's a parking lot and on the back of
4 that parking lot, there's an existing dirt and
5 gravel driveway that leads back to the gas property
6 on Lot 18.02 so Verizon and T-Mobile will be
7 utilizing that existing access for access to the
8 facility.

9 CHAIRMAN VIVONA: The gravel parking
10 area is right off the existing gravel road?

11 MR. COTTRELL: Correct.

12 CHAIRMAN VIVONA: It will hold two or
13 three cars?

14 MR. COTTRELL: Probably two or three.

15 Q. Did you have an opportunity to review
16 the Board engineer's report?

17 A. Yes.

18 MS. KNARICH: Would you like us to go
19 through that now?

20 CHAIRMAN VIVONA: Yes.

21 Q. Let's go to the technical review.

22 A. Number one, "The applicants verify
23 compliance with applicable US Fish and Wildlife
24 Service requirements and regulations," as part of
25 the -- as an FCC license holder, part of that

1 process, the carriers are required to go through the
2 National Environmental Policy Act Review, which,
3 within that review, includes a review of potential
4 impacts to threaten endangered species so that will
5 get reviewed during that review.

6 There was a concern of some mapped
7 Wetlands and previously, we were proposing the gas
8 line to extend north along the easterly property
9 line which may have an impact on the transition area
10 of that Wetlands so we relocated the gas run to the
11 westerly property line to avoid any potential impact
12 within that transition area.

13 MR. RUSCHKE: You are going through a
14 patch of woods. Do you know if there's any Wetlands
15 there? Have you checked that out?

16 MR. COTTRELL: We have not. I know
17 it's not mapped Wetlands.

18 MR. RUSCHKE: I know you are looking
19 for a waiver from compliance with -- if you are sure
20 that there's nothing there, it's not regulated.
21 Could we get that in writing from you?

22 MR. COTTRELL: We can do that, sure.

23 A. Number 3 is related to soil erosion
24 and settlement control certification which is
25 required when you disturb more than 5,000 square

1 feet, which will be. I have included soil erosion
2 in the plans in this newly revised set. We will
3 have to get that permit and --

4 MR. RUSCHKE: They are exempt from the
5 county so you submit it to Chatham.

6 MR. COTTRELL: The plans are completed
7 and we will have to formally submit the application.

8 A. Number 4 is related to stormwater
9 impacts. There was some site -- tree and vegetation
10 removal associated with the temporary site. As part
11 of that approval, when that temporary site was to be
12 removed, they were supposed to reforest that cleared
13 area. Now that we are going back to a permanent
14 site, we are being asked to review the stormwater
15 impacts since it's not going to be reforested, which
16 we will do. There will be a slight increase in the
17 stormwater runoff from existing. We can mitigate
18 that by installing deeper stone inside the
19 compounds.

20 MR. RUSCHKE: That's what I thought.

21 MR. COTTRELL: Or we can trench around
22 the perimeter.

23 MR. RUSCHKE: Right. So the existing
24 conditions would be prior to the temporary removal
25 of the trees and such?

1 MR. COTTRELL: Correct.

2 A. Number 5, as we are proposing to
3 extend the gas line from the road and I believe it's
4 on the opposite side of Shunpike Road, the existing
5 gas line, there would be some road repairment
6 required from trenching through the road and the
7 sidewalk and I don't believe there's a curb there
8 but the pavement and the sidewalk. We did provide
9 some repair details on the revised set of sheets.

10 CHAIRMAN VIVONA: About the gas, the
11 facility that is behind you, isn't that a natural
12 gas transfer station?

13 MR. COTTRELL: It's a regulating and
14 metering station. I don't know exactly. It's
15 probably more of a transmission pipeline and not
16 service pipelines.

17 CHAIRMAN VIVONA: So you can't tap in
18 back there?

19 MR. COTTRELL: Probably not.

20 CHAIRMAN VIVONA: How big is the gas
21 line, 2 inches?

22 MR. COTTRELL: Right. We also
23 provided a detail for the gas trench. On Sheet SP6,
24 we have the pavement repair detail and we also have
25 the gas trench detail.

1 CHAIRMAN VIVONA: For the record, once
2 the trench is dug and the pipe is laid, the ground
3 is restored; you wouldn't know it was there?

4 MR. COTTRELL: Right, it's restored to
5 its original condition.

6 A. Comment 6, "Obtain access utility
7 easements as necessary from the property owner
8 and/or Transcontinental Gas Pipeline Corporation."

9 I don't know if any work has been done
10 on that, Jen.

11 Q. Not as of yet but we are -- I'm
12 wondering if we need that because we are not
13 crossing onto their property.

14 A. There's an existing access easement
15 back into the adjacent lot so that existing easement
16 would be utilized so...

17 MR. SHAW: Are they talking about the
18 gas line easement?

19 MS. KNARICH: It says "as necessary
20 from the property owner and/or Transcontinental
21 Pipeline Corporation" so I thought it was the
22 existing access utility.

23 MR. COTTRELL: The gas company will
24 need to obtain an easement to run the gas line to
25 the facility. They will need an easement for that.

1 Usually, the utility companies will obtain that from
2 the owner.

3 MR. SHAW: And it's part of their
4 agreement to provide such an easement?

5 MS. KNARICH: Sure.

6 A. Number 7, "The applicant should
7 provide testimony to identify the need for the
8 875-square-foot gravel parking area." I'll flip to
9 SP2. The gravel parking area is on the east side
10 between the existing access drive and the new
11 compound. We are providing about 20 feet of parking
12 area in front. It will accommodate two or three
13 cars. Is that much space necessary? Probably not.
14 Typically, to grow grass in that area in front of
15 the compound, it is probably impractical only
16 because people are going to come park anywhere so I
17 think providing that much gravel space is
18 appropriate.

19 CHAIRMAN VIVONA: It was just a mud
20 hole when we visited it so hopefully, that will
21 mitigate that.

22 The property is almost level so
23 there's no drain runoff area that we need to concern
24 ourselves about?

25 MR. COTTRELL: Right.

1 A. Number 9, we received the Morris
2 County Planning Board approval.

3 Q. Number 8, the lighting?

4 A. Yes. Both carriers will have lighting
5 on their equipment locations. It's just a work
6 light in case they need to go at nighttime to do
7 maintenance for whatever reason. We put a timer on
8 there so if they leave without turning the switch
9 off, the light is not going to stay on indefinitely.

10 MR. WILLIAMS: It's not on at night
11 normally?

12 MR. COTTRELL: No. It will be off
13 unless someone turns it on.

14 CHAIRMAN VIVONA: It's not a motion
15 sensor?

16 MR. COTTRELL: Correct.

17 CHAIRMAN VIVONA: What type of
18 lighting are we talking about, quartz, spotlights?

19 MR. COTTRELL: LED flood lights.

20 CHAIRMAN VIVONA: Similar to people's
21 homes?

22 MR. COTTRELL: Right.

23 CHAIRMAN VIVONA: They will light up
24 the compound area, basically?

25 MR. COTTRELL: Yes. They are down-

1 shielded so when they open up the equipment
2 cabinets, they can see.

3 A. Number 10, "Proposed height of the
4 monopole should be corrected on the enlarged area
5 plan," which I'm hoping we did. Yes. That was
6 corrected on sheet SP2.

7 That's the end of the comments.

8 Q. Thank you.

9 One other report I want to address is
10 the noise consultant. In that report, he indicated
11 that you had been in communication with him and it
12 meets the limit at 17 feet, well under the distances
13 to the various adjacent properties and use during
14 any emergency is exempt from those limits?

15 A. Yes. We had several e-mails back and
16 forth. I provided him with the technical data of
17 the generator and he has confirmed it will meet the
18 standards.

19 MR. SHAW: Treating it like regular
20 office hours, 9:00 to 5:00, would that be good?

21 MR. COTTRELL: Yes. I think they do
22 it between 10:00 and 2:00 but 9:00 to 5:00 is fine.

23 CHAIRMAN VIVONA: The testing is very
24 similar to what homeowners have where it just comes
25 on and cycles through and the test lasts less than

1 20 minutes?

2 MR. COTTRELL: Yes, it's remotely
3 tested. The only requirement is the air quality
4 that day before they test it. If it doesn't meet
5 the standards, then they will have to wait to test
6 it.

7 CHAIRMAN VIVONA: It would be during
8 workdays, not weekends or holidays.

9 MR. COTTRELL: Yep.

10 BY MS. KNARICH:

11 Q. One other question, this proposed
12 wireless facility for Verizon and T-Mobile will not
13 be emitting any odor or adverse effect from this
14 facility?

15 A. No.

16 MS. KNARICH: I have no further
17 questions.

18 CHAIRMAN VIVONA: Minimum allowable
19 setback distance, 100 feet required, 0 feet
20 proposed, where are we getting 0 feet? Is that from
21 the property line?

22 MR. COTTRELL: Because the property
23 itself is zoned residential, I believe.

24 CHAIRMAN VIVONA: Maximum allowable
25 impervious lot coverage, 17,102 square feet allowed

1 and 48,609 square feet preexisting. Is that -- I'm
2 not following what those numbers are.

3 MR. COTTRELL: We are reducing the lot
4 coverage with this installation because the existing
5 pole has that large 24-foot-by-24-foot concrete
6 ballast which is being removed so...

7 MR. SHAW: That coverage is for the
8 church parking lot?

9 MR. COTTRELL: It includes everything,
10 yes, all improvements on the lot.

11 CHAIRMAN VIVONA: Your compound is
12 only 50 by 50, 2500 square feet?

13 MR. COTTRELL: Correct.

14 MR. MICHAELS: I had the existing
15 coverage was 37.2 being reduced to 37 percent. The
16 requirement is 15 percent so they are reducing it,
17 but on a percentage basis, by .2 percent.

18 CHAIRMAN VIVONA: Okay.

19 Number 11, minimum allowable setback
20 to an accessory structure, rear yard setback is 50
21 feet and you are going for 18. Is that from the
22 property line of the church or from the parking lot
23 of the church?

24 MR. COTTRELL: That is to the adjacent
25 property line, the Transcontinental Gas property

1 line.

2 CHAIRMAN VIVONA: Okay.

3 MS. KNARICH: If you measured it from
4 the church property, it would be more of a distance,
5 I believe.

6 CHAIRMAN VIVONA: I believe it's 200
7 feet from the church.

8 MR. COTTRELL: Yes.

9 CHAIRMAN VIVONA: As far as new
10 construction, there's no more trees coming down or
11 anything like that? Everything is going to go in
12 the existing compound area?

13 MR. COTTRELL: Correct.

14 CHAIRMAN VIVONA: Except for the gas
15 line but you are not anticipating trees coming down?

16 MR. COTTRELL: I wouldn't anticipate
17 that either. There's the trees within that area are
18 sparsely laid out so I would not anticipate any
19 trees coming down.

20 CHAIRMAN VIVONA: Okay.

21 MS. KNARICH: I don't have anything
22 further of this witness.

23 CHAIRMAN VIVONA: Any other questions
24 for Mr. Cottrell?

25 MR. MICHAELS: You had said that the

1 overhead power line is going to be put underground
2 from that pole into the compound. Is there any
3 proposal for the power line from the street to that
4 pole? Is that going to stay overhead or is that
5 going to be buried?

6 MR. COTTRELL: That's going to stay
7 overhead.

8 MR. MICHAELS: I have a note from my
9 visit to the site. I saw two microwave dishes on
10 the temporary pole. Are they going to be put on the
11 new pole?

12 MR. COTTRELL: Yes.

13 MR. MICHAELS: They are not showing on
14 this elevation.

15 MR. COTTRELL: I don't think we show
16 that on the plans, which it probably should be,
17 right?

18 MR. KRONK: Yes. But they wouldn't be
19 permanent. It's just until fiber gets in.

20 MR. COTTRELL: If this gets approved,
21 they will have to engage with a fiber provider to
22 install a fiber line back to the site. Sometimes
23 that takes six months so what they're going to do is
24 install a small microwave dish, probably at their
25 antenna center line height, and you have seen them.

1 They are probably 1 foot in diameter and that will
2 link to a nearby site so they can have that backhaul
3 connection.

4 MR. MICHAELS: So you are saying the
5 microwave dishes that are on the temporary tower are
6 going to be temporarily on the new tower until a
7 fiber line can be installed; is that correct?

8 MR. COTTRELL: Yes. I don't know --
9 I'm trying to picture the pole. I don't remember
10 whose dishes they are. T-Mobile will have one and
11 Verizon Wireless until they get the fiber back
12 there.

13 DR. EISENSTEIN: You are showing an
14 AT&T existing approved temporary equipment on the
15 plot but there's no antennas for AT&T on the pole.
16 What's happening with them?

17 MR. COTTRELL: I don't know.

18 MR. SHAW: AT&T is going across the
19 street to Shunpike where they have an approval.

20 DR. EISENSTEIN: What is going to
21 happen with the equipment?

22 MR. COTTRELL: The antennas will be
23 removed so they are going to have to remove that
24 equipment. Once that temporary tower comes down,
25 they will have no antennas there.

1 DR. EISENSTEIN: So that spot would be
2 available for an additional collocator if someone
3 else came through?

4 MR. COTTRELL: Correct.

5 CHAIRMAN VIVONA: Our initial intent
6 was to have AT&T collocate as well but they had
7 already gotten approvals for one of the power poles
8 and we were hoping to have all three in one area as
9 opposed to have two separate compounds but AT&T
10 decided to use their approved location which was
11 passed by the Board.

12 DR. EISENSTEIN: Right.

13 CHAIRMAN VIVONA: The compound is also
14 designed for a third applicant size-wise and all
15 that.

16 MR. COTTRELL: Right.

17 CHAIRMAN VIVONA: So there wouldn't be
18 any more disturbance for a third company to
19 collocate.

20 MR. COTTRELL: Correct. The electric
21 utilities will already be there. They will have to
22 come in and install a meter and that's it.

23 CHAIRMAN VIVONA: Do you have any
24 other questions or concerns?

25 MR. RUSCHKE: No. He addressed my

1 questions before.

2 CHAIRMAN VIVONA: So right now, anyone
3 from the public can ask questions about the
4 testimony that was given. No speculation. You can
5 ask questions about whatever Mr. Cottrell has just
6 said. I ask that when you ask a question, state
7 your name and address for the record.

8 MR. SHAW: You will be given an
9 opportunity to make a comment at the end of the
10 presentation.

11 MR. WELZ: Robert Wells, 310 Shunpike
12 Road.

13 I live there with my wife. We have
14 three young kids. We have been there 11 years.
15 What the plans don't show is my house is next door
16 to this compound you are talking about. You are
17 going to run a gas line through the woods between
18 their driveway and my driveway. It shows on that
19 plan.

20 I strongly oppose any of these --

21 MS. KNARICH: Could you show us your
22 house on the plan?

23 MR. WELZ: My house is right here. My
24 neighbor, Ron and Trish, their house is right here.
25 Cougar Field, one of the great assets of the town,

1 is right here where hundreds of families come each
2 weekend, our star athletes go there every day.

3 You know, this is a compound that's
4 going to disrupt this whole area. I'm strongly
5 against it.

6 I think all these things you're asking for approval
7 on is absurd.

8 MS. KNARICH: Is there a question?

9 CHAIRMAN VIVONA: This is just
10 questions. You will have an opportunity --

11 MR. WELZ: It's all important stuff.
12 This is a big deal. I don't want to be cut off
13 because I'm going to lose a lot in this.

14 MR. SHAW: Again, I know you want to
15 talk. You can't talk now. You will have a full
16 opportunity later on. If you have questions of him
17 --

18 MR. WELZ: Sure, I have a question
19 about -- I was here a couple years ago and they were
20 asking for approval of the temporary site. They
21 wanted a six- month extension to put it back on the
22 poles. Now, it's not temporary anymore; it's
23 permanent.

24 MS. KNARICH: Correct, it's permanent.

25 MR. WELZ: You are talking about the

1 microwave dishes. They are going to be permanent.

2 MS. KNARICH: They will be temporary.

3 MR. WELZ: I doubt that. All this
4 temporary stuff is becoming permanent? I'm
5 confused. This was a temporary site and now, it's a
6 proposed permanent site when it was supposed to go
7 on the pole.

8 MS. KNARICH: In terms of the
9 permanent and temporary, I can have another witness
10 address what's going up and down.

11 MR. WELZ: Sure.

12 You are saying a third possible
13 carrier will be coming here and you are saying cars?
14 What type of cars are coming here? Work trucks?

15 MR. COTTRELL: The cell technicians
16 come to the site once every four to six weeks.

17 MR. WELZ: So there is going to be
18 random people coming in the middle of the night next
19 door to my house?

20 MR. COTTRELL: They typically don't
21 come at night unless there's an issue.

22 MR. WELZ: There's issues all the
23 time. This was supposed to be a temporary site and
24 now it's an issue.

25 CHAIRMAN VIVONA: Just questions about

1 his testimony.

2 MR. CORELLA: Ron Corella, 312
3 Shunpike Road.

4 I moved in there five years ago. I
5 spent a lot of money redoing the house that was
6 there. I put a lot of new things into it thinking
7 I'm going to live there forever and now this comes
8 along. I mean, where do we get our values back when
9 this gigantic tower from nowhere goes there? And
10 the other question is, if the other cellular company
11 could move up to where the other opposed tower was
12 proposed, why can't this stuff go up there too? Why
13 does all this stuff have to be within the playing
14 field of the kids and the families and everything
15 else? Why does this area have to look like the
16 dumping ground for every utility in the world?

17 MS. KNARICH: I'll object to that.

18 MR. SHAW: Again, that's public
19 comment. There is an appropriate time to make
20 comments.

21 MR. CORELLA: Okay. Let's address
22 what he said and everything else. What about why
23 the other cellular company went onto the existing
24 tower? Why can't these people go on it too?

25 CHAIRMAN VIVONA: Because those towers

1 only accept one carrier.

2 MR. SHAW: What they can accept is 42
3 wires. A typical array by Verizon Wireless or AT&T
4 has 12 antennas and for T-Mobile, they have 9 so you
5 can't collocate a Verizon Wireless and AT&T because
6 they both have 12 on a power haul.

7 MR. CORELLA: Why can't they put
8 another pole up?

9 MS. KNARICH: We have our radio
10 frequency engineer that will address the coverage.

11 MR. SHAW: Right now, we are in the
12 middle of the presentation.

13 MR. CORELLA: I thought these were
14 questions that he would know.

15 CHAIRMAN VIVONA: These are questions
16 to clarify what he said, not hypotheticals or --

17 MR. CORELLA: Okay. They are talking
18 about putting a gas line from the street in. That's
19 what he is talking about, right? From the little
20 telephone pole that should be taken down and a new
21 one should be put there because it's so old.

22 They are going to be digging by his
23 house and it's another thing we have to deal with
24 with the construction of that going in and
25 everything else. I think this whole thing could be

1 put out in the field area where the towers are there
2 existing.

3 MS. WELZ: Rachel Welz, 310 Shunpike
4 Road.

5 I have a question about the trees that
6 were spoken of with the gas line. I don't
7 understand the math and everything like that. I
8 want to be clear as to, you said that no more trees
9 were going to be taken down and my husband had said
10 that -- something about our gas line or the gas
11 lines...

12 MR. WELZ: Sure. The gas line shows
13 it's running up on this side of the driveway, right?

14 MR. COTTRELL: On the west side, sure.

15 MR. WELZ: That's all trees right
16 there.

17 MS. WELZ: My question is: Is there a
18 potential for these trees to be cut down between our
19 yard and the church?

20 MR. COTTRELL: No. The gas line is 2
21 inches in diameter and the trench is 12 inches. We
22 are going to hug the edge of the pavement along the
23 driveway. There is a buffer with no trees in that
24 area and we are crossing the parking lot in that
25 area and we are purposely hugging the edge of the

1 payment so that we do not go into the wooded area.

2 MR. WELZ: So it would go underneath
3 the nursery school playground where the kids would
4 have to leave for the day?

5 MR. COTTRELL: That's all scheduling
6 they will have to do with the church.

7 MR. SHAW: These are public comments.
8 You are welcome, when the time comes. We are
9 getting through the site engineer's testimony. You
10 are supposed to ask questions of this witness. They
11 have other witnesses that will have other
12 information that might help you.

13 MR. CORELLA: I have another question.
14 This hideous tower, is it going to have nice tree
15 branches coming off of it?

16 MS. KNARICH: I object to that.

17 MR. COTTRELL: We will have someone to
18 go over that.

19 MS. ROMANO: Why can't we keep it to
20 the right of the property?

21 MR. COTTRELL: There's a known
22 Wetlands area in the PSE&G easement. There's a
23 potential that has a 150-foot buffer on it which
24 spreads into the subject property. We were
25 originally going on the east property line to avoid

1 any impact to that transition area. We moved it to
2 the other side where we know we are more than 150
3 feet away from the Wetlands area.

4 MS. ROMANO: What happens if you
5 disturb a 12-inch area of the Wetlands? I'm trying
6 to weigh what's more harmful. Is it to the
7 neighbors or Wetlands?

8 MR. HYLAND: Are you allowed to go to
9 the Wetlands?

10 MS. KNARICH: We might not get
11 approval for that.

12 MR. WELZ: I think that's a great
13 idea.

14 MR. COTTRELL: The DEP has regulations
15 of what you can do and can't do. We have to apply
16 for a permit and see if the DEP would approve it.

17 MR. HURRING: But we could apply for
18 it just to see, right?

19 MS. ROMANO: To see how far on the
20 property it is to get it close to the Wetlands just
21 to see if there's another location rather than just
22 not research that side at all. I'm trying to really
23 understand where the Wetlands is and if there's any
24 way to get it onto the right side of the property.

25 MR. COTTRELL: We can look into it.

1 We did a preliminary investigation and it's likely
2 that will impact the transition area.

3 MR. SHAW: Is there a general permit
4 for utilities in a transition area?

5 MR. COTTRELL: Yes. But one of the
6 conditions of receiving a permit is you have to do
7 the alternatives analysis. If you could get that
8 line back without any disturbance, that's the way
9 you have to go. If there's an alternative solution
10 that does not impact Wetlands, the DEP causes you to
11 use that alternative.

12 MR. BORSINGER: Isn't the gravel road
13 preexisting disturbance? Just go alongside the
14 gravel road.

15 MR. COTTRELL: You still have to get a
16 permit. It's still considered a transition area
17 even if you go through pavement.

18 MR. BORSINGER: I would think they
19 prefer you going through an existing disturbed area.

20 CHAIRMAN VIVONA: Can we investigate
21 this further to see what our options are?

22 MR. RUSCHKE: You will need approval
23 from the DEP and US Fish and Wildlife. They have a
24 50-foot buffer from the Wetlands.

25 DR. EISENSTEIN: If you go to SP1,

1 what is this thing to the right of your site? Is
2 that a transmission tower?

3 MR. COTTRELL: Yes.

4 DR. EISENSTEIN: Was that looked at as
5 a potential site?

6 CHAIRMAN VIVONA: That's in a
7 Wetlands.

8 MR. SHAW: We know that's in a
9 Wetlands.

10 MR. COTTRELL: I think they were
11 required to come off those towers.

12 MR. SHAW: The tower on the site plan
13 that you are pointing to is a tower that's located
14 in Wetlands. We had that established in other
15 applications.

16 MR. COTTRELL: Okay.

17 MR. HURRING: What's the difference
18 between this gas line and the one that goes to my
19 house?

20 MR. COTTRELL: The difference is
21 depending on the pressure and the distance, it might
22 be slightly larger.

23 MR. HURRING: Otherwise, the same?

24 MR. COTTRELL: It's the same, yes.

25 DR. EISENSTEIN: Following up on that,

1 the next tower is on the other side of Shunpike?

2 CHAIRMAN VIVONA: Correct, that's the
3 tower AT&T is on.

4 DR. EISENSTEIN: How far way is the
5 next tower down the line?

6 MR. COTTRELL: I don't know.

7 CHAIRMAN VIVONA: That's Pine Street,
8 which we declined.

9 MR. SHAW: Subject to reviewing the
10 feasibility of this site.

11 CHAIRMAN VIVONA: The tower further
12 away is in a low point where it can't reach the
13 transmission areas.

14 MR. CORELLA: That one on Pine Street
15 that was declined, didn't they win the right to use
16 that? Didn't you lose 70 or \$80,000?

17 CHAIRMAN VIVONA: No.

18 MR. CORELLA: That's not what I heard;
19 that's not what I heard. I heard we lost on that.

20 MS. KNARICH: Can we keep it to the
21 questioning of the engineer, please?

22 CHAIRMAN VIVONA: Yes. This is based
23 upon his testimony; that's it. You will have your
24 opportunity to ask your questions and make your
25 statements at the end of everyone's presentation.

1 Hopefully, during the next witnesses' presentations,
2 they will be able to answer your questions. If you
3 have any questions about Mr. Cottrell's testimony,
4 you may ask that. Otherwise, you just need to wait
5 for the proper moment.

6 MS. WELZ: You were speaking on 200
7 Shunpike Road? Is there an existing tower there? I
8 want to be clear what you are speaking about.

9 MR. SHAW: There was an approval that
10 was given by the Board to the tower across the
11 street from this location which was a replacement
12 for a -- previously approved by the Board for a
13 lattice work tower which PSE&G took down. When it
14 was taken down, AT&T and T-Mobile went onto the
15 current location at Gloria Dei as their location
16 pending PSE&G getting the monopoles done. There was
17 a lengthy delay in terms of when PSE&G was going to
18 let people go forward. In any event, AT&T pulled
19 permits and is going through with that approval at
20 200 Shunpike. It's across the
21 street --

22 MR. WELZ: On the even side with us?
23 Am I wrong in saying that? It's not an odd number.

24 MS. WELZ: I'm confused. It's right
25 across the street from where we are speaking of?

1 MR. SHAW: It's right across the
2 street and there used to be one there and it's down
3 and AT&T is going back.

4 MS. WELZ: So along the same stretch
5 of power lines?

6 MR. SHAW: Yes.

7 MR. HYLAND: It backs up to Robin Hood
8 Lane, right?

9 MR. SHAW: Some places.

10 MR. MICHAELS: Mr. Cottrell, could you
11 measure the distance of the proposed tower to Mr.
12 Welz's house? I guess that's the closest one.

13 MR. COTTRELL: Well, I show a shed and
14 a landscaping tie on that property. I don't show
15 the house.

16 MR. WELZ: The shed is about 50 feet
17 from my house where the kids sleep.

18 MR. MICHAELS: Add 50 feet from the
19 shed so we have an idea how far that is.

20 MR. HYLAND: You get a feel on the
21 front page for the lots.

22 MR. COTTRELL: 500 feet.

23 MR. MICHAELS: Maybe we can hear from
24 the planner to confirm that?

25 MR. COTTRELL: Okay.

1 CHAIRMAN VIVONA: Any other questions
2 for Mr. Cottrell?

3 (No response)

4 CHAIRMAN VIVONA: Next witness?

5 A D A M F E E H A N, first having been duly sworn,
6 testified as follows:

7 MR. FEEHAN: Adam Feehan. I have a
8 cold. I'll be coughing a lot. I graduated from the
9 NJIT with a Bachelor's in electrical engineering. I
10 have been an RF engineer for PierCon Solutions for
11 the past four years. I have helped design hundreds
12 of wireless facilities for multiple carriers. I
13 have been accepted as a radio frequency expert in
14 Boards all over New Jersey. I have done lots of
15 studies on the frequencies interfering and studies
16 to see if there's any interaction between them and
17 the different technologies, including public safety
18 and wireless carriers.

19 CHAIRMAN VIVONA: Okay. Thank you.

20 (Exhibit A-11, T-Mobile existing and
21 proposed coverage, was marked for Identification.)

22 MR. HYLAND: Can you just -- before we
23 start, can you kind of explain the big picture, what
24 he is trying to get across to the Board?

25 MS. KNARICH: I will. I want to enter

1 the exhibit first.

2 DIRECT EXAMINATION BY MS. KNARICH:

3 Q. What is the date on that?

4 A. 5/3/17.

5 DR. EISENSTEIN: I'm following with
6 the sheets that were provided. Are the two overlays
7 the next two sheets that I have?

8 MR. FEEHAN: I'll identify them.

9 A. What I'm going to show, the first
10 overlay, is existing coverage without the temporary
11 facility. The next will be the proposed coverage.
12 For you, I believe that would be Exhibit T-E.

13 Q. There was a question by a Board member
14 to explain the process as to how you arrived at
15 producing and preparing these exhibits. Could you
16 go over that?

17 A. Sure. T-Mobile, specifically, we have
18 existing facilities located throughout Chatham and
19 the township and the surrounding townships as well.
20 They are working to try to provide coverage to
21 anybody who is a T-Mobile user. They provide 3G, 4G
22 LTE service, otherwise known as your high-speed
23 data. We look at the surrounding sites and
24 propagation used by -- common tools which all the
25 wireless carriers use and we plot them on a map.

1 That's what I'll show with the next two overlays.
2 We also use drive test data to confirm that these
3 models are accurate. We look at where a gap is
4 located and try to fill that gap.

5 Today, I'll be talking about a
6 coverage gap for T-Mobile and then, Verizon
7 Wireless. In order to fill the gap, you want to be
8 located within the gap so you would not want to
9 locate within a couple hundred feet of another site
10 because you would provide redundant coverage and
11 cause interference as opposed to additional coverage
12 to a user for T-Mobile or Verizon Wireless.

13 Q. What do you mean by "interference"?

14 A. When you have two signals, the
15 wireless carriers, they use the same frequencies at
16 their surrounding sites. LTE, specifically, is the
17 technology I'm talking about. They need to have
18 what's called a "good signal-to-noise ratio." You
19 want to be able to receive coverage from one site
20 better than all the other ones combined; otherwise,
21 you run into an issue where your device, your phone
22 or tablet, using the technology is hearing
23 everything and can't discern which site it's coming
24 from so you don't have a good signal. That would be
25 a bad signal-to-noise ratio. You could imagine if

1 everyone in the room tried to talk to people at the
2 same volume. You wouldn't hear what anyone is
3 saying because there would be a lot of background
4 noise. That's the term we use. You want to be
5 above the noise of other sites.

6 Q. Just a brief overview in terms of why
7 T-Mobile needs this site...

8 A. I'll get into the overlays. Before I
9 get to that, I'll describe the area.

10 This is a topographic map. You can
11 see hills and some key landmark points, schools,
12 Cougar Field. If we look at our Exhibit A-11, we
13 look to the upper right, you see the jughandles from
14 Route 24. If you look to the lower right, you can
15 see the intersection of Kent Place, Boulevard and
16 Passaic Avenue. Those are the red and white roads
17 on the exhibit. You can see Fairmont Road in the
18 bottom left. In the top left, you see Green Village
19 Avenue near the "North" sign.

20 Just some idea of the terrain in
21 respect to our proposed facility, in the center of
22 the exhibit labeled by the pink dot, NJ06581D. In
23 parentheses is the name of the temporary site as
24 well. If we go to the northeast, we are sloping
25 downhill going down the power lines. Nearly every

1 other direction, you are going uphill or staying
2 level.

3 Our proposed facility is on Shunpike
4 Road. We are east of Chatham High School and Cougar
5 Field and surrounded by suburban uses, several
6 neighborhoods. That would be the defining factor in
7 the level of coverage I'm showing in the next two
8 overlays.

9 To go over where the sites are
10 located, you see a purple site in the top left.
11 Those are all existing or approved T-Mobile
12 facilities. You see NJ06284C; that's located on
13 Kings Road. That's a monopole. If we go clockwise
14 to NJ06689A, that is PSE&G tower near Jessica Court
15 and Brook Lake Road. Clockwise and north, we go to
16 the site NJ06443A; that's a monopole at the Route 24
17 jughandle. Down on the east side, you see NJ06415A;
18 that is a power line lattice tower at 45 Chatham
19 Road. Continuing clockwise to the west, you see
20 NJ06631F; that's a temporary monopole or facility
21 located on School Avenue. If we continue clockwise
22 to the last existing or approved T-Mobile facility,
23 you see NJ06301A; that is a monopole on 401 to 405
24 Southern Boulevard. Again, in the center of our
25 exhibit is our proposed facility shown by the pink

1 dot, NJ06581D, at 300 Shunpike Road.

2 DR. EISENSTEIN: To the southeast of
3 the proposed site down towards Kent Place on the
4 other side of the river, you have no sites in that
5 whole area there.

6 MR. FEEHAN: Correct, there are no
7 sites for T-Mobile there. If you notice, there's a
8 ridge which runs along the southeast. Over there,
9 you would not be able to accompany coverage on west
10 side of that ridge. It's a pretty significant
11 ridge. That will be shown as a coverage gap in the
12 area as well on the next overlay.

13 DR. EISENSTEIN: Okay.

14 A. I'll flip over the first overlay.
15 This will show the existing coverage provided by
16 existing or approved facilities with T-Mobile. This
17 is without the temporary site in pink.

18 Just to be specific, the green
19 coverage is T-Mobile in-building residential
20 coverage. This applies to a single-family home.
21 That's why it's called "residential coverage." We
22 established certain thresholds to provide coverage
23 to a residential home versus a commercial business
24 or on the street or in a car. T-Mobile specifically
25 breaks it down to in- building commercial, in-

1 building residential and in- vehicle. This is in-
2 building residential because that's the primary use
3 of the surrounding area.

4 Q. Because we are located in a residential
5 zone?

6 A. Yes.

7 If you look at the first overlay on
8 Exhibit A-11, you can see there is a coverage gap or
9 an area which is not enclosed by the green area, the
10 T-Mobile in-building residential coverage. I'll
11 identify some of that area. I won't identify all of
12 that area.

13 As Dr. Eisenstein pointed out, to the
14 southeast, there is another coverage gap. Our
15 proposed facility will not address that gap. I'll
16 talk about what our facility will address, the area
17 immediately surrounding our proposed facility.

18 DR. EISENSTEIN: What is the pink on
19 your overlay? Is that shining through from
20 underneath?

21 MR. FEEHAN: That's from the
22 topographic map.

23 DR. EISENSTEIN: Okay. I see. Thank
24 you.

25 A. Exhibit A-11, I'll describe the

1 coverage gaps that are currently present. There's a
2 coverage gap on Shunpike Road from Watchung Avenue
3 to Candlewood Drive to Fairmont Avenue. That's
4 about 1.6 miles; Lafayette Avenue, about .9 miles;
5 Inwood Road, about 1600 feet; Oak Drive, about 1200
6 feet; Chandler Road, about 2400 feet; Pine Street,
7 about a half a mile; Woodland Road, from Lafayette
8 to Garfield Street, about 1.4 miles; Chatham Street,
9 about 3400 feet, and Washington Avenue, about one
10 mile. That represents the area which currently
11 doesn't have green coverage surrounding it so it's
12 unreliable coverage for T-Mobile LTE 2100 megahertz
13 coverage.

14 Q. When you say "unreliable," that's not
15 just dropped calls but data?

16 A. Yes, it's Voice Over LTE, which means
17 the customer can make phone calls on the 2100
18 megahertz LTE service on the data service and it's
19 also used for data services itself, such as
20 downloading things or updating or uploading things
21 such as everything your phone is doing in your
22 pocket all the time using more data.

23 MS. ROMANO: If people have WiFi in
24 their house, if you put up this tower, that's not
25 going to improve, right? Only for people that don't

1 have Wi-Fi through Verizon or another provider in
2 their home?

3 MR. FEEHAN: These are completely
4 separate networks from the Wi-Fi. They would not
5 have any effect on those. They would still be able
6 to use it or not use it based upon their preference.

7 MS. ROMANO: So it only helps people
8 outside of their home?

9 MR. FEEHAN: No. T-Mobile refers to
10 this level of coverage as "in-building residential."
11 This is a signal level on the outside of the house
12 but it is compensating for the additional losses
13 which will occur when trying to provide coverage
14 inside the building.

15 MS. ROMANO: Okay.

16 MR. HURRING: Wasn't your point:
17 Why do I need coverage?

18 MS. ROMANO: I would think people are
19 already connected on Wi-Fi unless they do not have
20 it in their home. I guess I'm not following why we
21 need so much coverage in a residential neighborhood
22 when we all support our own connection through data.
23 I understand car accidents or emergencies or things
24 like that. If it's primarily for data or enhanced
25 data, I think they have that in their home.

1 MR. FEEHAN: As I said, they also
2 introduced Voice Over LTE. They can make phone
3 calls on that network as well. I believe they are
4 mandated by the FCC. They need to provide coverage.
5 They are required to provide coverage for the
6 frequencies they are licensed for.

7 MS. KNARICH: The trend now is more
8 tablets and cell phones and if you do not have the
9 coverage through your phone carrier, you wouldn't be
10 able to access the internet if you didn't have a
11 computer that had Wi-Fi at home.

12 MS. ROMANO: But I think everyone
13 probably has it at home.

14 MS. KNARICH: Not percentage-wise, not
15 the trend. The trend is more for people to do
16 tablets and use their phone for Internet rather than
17 the computer. That's why we are all mobile, I
18 guess.

19 MS. ROMANO: I'm mobile in my own
20 home.
21 I have Wi-Fi. I don't have an actual computer
22 that's plugged in.

23 MR. HURRING: What changes from --
24 what impacts this if we say "We only want the car
25 coverage"? How does it impact it? What changes, in

1 any way, if you say "We need coverage just in car"?
2 Is this gap not there or it is but you don't need as
3 strong a signal?

4 MR. FEEHAN: The reason there are the
5 three different thresholds is, sometimes we are just
6 trying to cover a highway so we do not have to
7 provide in- building because there are no homes
8 there. This is an area full of suburban homes. If
9 it was an area which was full of commercial type
10 uses on every single block, it wouldn't be showing
11 in-building residential; it would be in-building
12 commercial and that would be multilevel buildings
13 and masonry buildings.

14 MR. HURRING: But you would still need
15 it, you would just have a weaker signal coming out?

16 MR. FEEHAN: It would not be weaker.
17 I would show a signal that would cover less that
18 would be a higher number because -- let's put this
19 in numbers. If you need to get into a residential
20 building, I'm showing -97 dBm. That's just a
21 number. If I need to get into a commercial
22 building, that number needs to be higher because the
23 loss will be greater trying to get into a commercial
24 building versus a residential building.

25 DR. EISENSTEIN: What would that

1 number be?

2 MR. FEEHAN: I believe -84 dBm.

3 DR. EISENSTEIN: RSRP?

4 MR. FEEHAN: Yes.

5 DR. EISENSTEIN: And what would it be
6 for in-vehicle coverage?

7 MR. FEEHAN: -104. It's all based
8 upon the differences of losses.

9 DR. EISENSTEIN: I think the question
10 is: If you were to make this plot for the
11 in-vehicle coverage, the -104, what would the gap
12 look like under those conditions at 2100?

13 MR. FEEHAN: The gap would be smaller.
14 I'm not sure how much smaller because I did not plot
15 that but there would be a larger green area at -104
16 coverage.

17 MR. HURRING: That's what I was trying
18 to understand.

19 DR. EISENSTEIN: But it would be your
20 sense that the gap would not disappear?

21 MR. FEEHAN: Correct, it would be fine
22 for roads but -- in this area, there's plenty of
23 roads so the coverage would be fine but there's
24 plenty of residential homes in the area which would
25 -- I couldn't say that area would not be in a gap.

1 That's why I'm showing the threshold which is
2 applicable to the use in the area.

3 DR. EISENSTEIN: I want to make sure,
4 the Board and possibly the public and me will both
5 be confused because, at some later time, you are
6 going to present Verizon coverage at -95 dBm. Is
7 there much of a difference between -95 and -97?

8 MR. FEEHAN: Not much.

9 DR. EISENSTEIN: Why is the gap for
10 Verizon Wireless that you are going to show so much
11 larger than the gap for T-Mobile?

12 MR. FEEHAN: Because there are sites
13 in different areas. T-Mobile and Verizon are
14 collocated at many areas but not every single
15 position. Sometimes they are at different
16 locations. For example, if you look at Exhibit
17 A-11, the site labeled NJ06631F, there's a Verizon
18 Wireless facility near to there but it's not there
19 yet; therefore, there will be no coverage coming
20 when we go to the next exhibit.

21 DR. EISENSTEIN: That's, for Verizon
22 Wireless, Chatham 3?

23 MR. FEEHAN: Yes.

24 MR. HURRING: I have a question. I
25 know there is -- I heard the ubiquitous coverage,

1 right? Is that -- does it say you need it -- for
2 the commercial, right? "This is what is required
3 when you are trying to cover a commercial area.
4 This is what's required for residential" or was it
5 just coverage and it's up to your discretion of what
6 that -- I forgot. The 94 or whatever? Is -- what's
7 "ubiquitous" and what am I reasonably expecting you
8 to have to cover, right? If that gap shrinks to
9 almost nothing when you use the car one, then you
10 could argue it is covered, just not as strong as you
11 would like but it's covered. That's what I'm trying
12 to understand, what the requirement is.

13 MR. FEEHAN: You need to apply the
14 correct threshold for the environment you are trying
15 to cover. As I said before, if you are trying to
16 cover a highway and there's no buildings on it, the
17 in-vehicle coverage is fine to show there because
18 there's no in- building; there's no buildings. The
19 people are outside or in their vehicle.

20 DR. EISENSTEIN: I think he's asking
21 you a different question. Why did you choose to use
22 that threshold as opposed to designing a site for
23 vehicle coverage on the streets? Is that a business
24 decision -- I think that's the question -- or is
25 that a standard, a requirement?

1 MR. FEEHAN: You are required to cover
2 people where they are going to be. They are going
3 to be in their homes so you use in-building.

4 MR. HURRING: Why do you use that
5 strength of coverage?

6 MR. FEEHAN: Because this is the
7 coverage that's required to provide coverage inside
8 a home.

9 MS. ROMANO: Is that a federal
10 regulation that we have to have coverage in a home?

11 MR. FEEHAN: You will have to answer
12 that.

13 MS. KNARICH: The federal regulation
14 requires you to have coverage throughout.

15 MS. ROMANO: At what level? Does it
16 depend on what zone the area is? If this is R3,
17 does it require you to have in-home residential
18 coverage?

19 MS. KNARICH: It's all coverage
20 throughout, not just residential or commercial. It
21 doesn't go by that type of specificity. It's just a
22 federal regulation that requires us to provide
23 coverage to our consumers. I don't have the
24 statistics on me.

25 MS. ROMANO: I think we are trying to

1 say, if it's just car coverage, you could have more
2 green and you are covered.

3 MR. SHAW: Dr. Eisenstein?

4 DR. EISENSTEIN: There are two
5 standards. The seamless and ubiquitous is a
6 different standard than the 1996 Telecommunications
7 Act. It says that they have to provide a coverage
8 "substantially better than mediocre." Those are the
9 words in the act. It comes down to each one of the
10 providers to come before a Board like this or to
11 convince me that what they are doing is
12 substantially better than mediocre. They are not
13 looking for optimal or minimal coverage but
14 something that is okay.

15 This issue, and I have never liked
16 this when they testify when they do in-vehicle or
17 in-building, I never liked that. I have tried to
18 stop them from saying that but they continue with
19 it. What they should be doing is, the same way that
20 any engineer would design any other structure, you
21 say "Here's the design criteria. This is the way we
22 want to do it and this is the level we want,"
23 forgetting the in-building and in-vehicle. The -97
24 is appropriate. That's the right level of signal
25 that they should be designing for.

1 MS. ROMANO: That's what this is?

2 DR. EISENSTEIN: That's what they are
3 proposing here and later, you will hear -95 and they
4 are close. That's okay.

5 There's a separate law that was passed
6 in 1999 which was the 911 law. What that said --
7 that's where the seamless and ubiquitous comes in.
8 The FCC and Congress wanted to have the wireless
9 networks operate in such a way that, if someone
10 makes a 911 call, they would be able to be located
11 within 100 meters based upon -- the original law
12 said "without the use of GPS equipment." In order
13 to do that, you have to have seamless ubiquitous
14 coverage. Otherwise, if someone was more than 100
15 meters away or outside the distance of a tower, they
16 couldn't be located. That would violate the law.

17 There's since been a lot of
18 modifications. They will never have seamless,
19 ubiquitous coverage, especially not in this area
20 because of the terrain and the ridges and hills and
21 valleys. What they have to do, their burden in
22 terms of the FCC, is to show they are making
23 continuous progress to fill the network in against a
24 standard of substantially better than mediocre. So
25 the question is, over here, they have an appropriate

1 design standard which means that the gap they are
2 showing is appropriate for what they have. I hope
3 that is helpful for you.

4 MS. ROMANO: Yes. Thank you.

5 MR. HYLAND: Did you come up with that
6 terminology?

7 DR. EISENSTEIN: I wish I did. I
8 could have gotten a creative award. That's FCC
9 jargon.

10 A. I identified the gap we are trying to
11 address with our proposed facility. We look to the
12 second overlay that adds on the proposed coverage to
13 be gained from our proposed facility at 300 Shunpike
14 Road. I'll just briefly describe where this is
15 going to fill the previous gap.

16 It will provide coverage to most of
17 Shunpike Road from Candlewood Drive to Fairmont
18 Avenue and provide an additional 1.6 miles of
19 coverage -- I'm sorry. Most of Lafayette Avenue,
20 .9-miles; all of Inwood Road, all of Oak Drive, 1600
21 feet, 1200 feet; half of Chandler Road, 1200 feet;
22 half of Woodland from Lafayette to Garfield, about
23 .7 miles; all of Chatham Street, about 3400 feet,
24 and most of Washington Avenue, about .75 miles. As
25 you can see by looking at the overlay with Exhibit

1 A-11, you can see a large portion of the gap being
2 filled.

3 MR. WILLIAMS: How much is now filled
4 by the temporary tower?

5 MR. FEEHAN: I have that in a separate
6 exhibit if you would like to see that.

7 MR. WILLIAMS: I want to know how
8 much.

9 MR. FEEHAN: It's a little smaller.
10 If I was to show the coverage from the temporary
11 facility, you would see areas to the northeast of
12 our proposed facility start to diminish and pull
13 away because it's a smaller installation that's 100
14 feet and less antennas so you have to add additional
15 equipment to combine the frequencies onto one
16 antenna. Overall, it would be less.

17 MR. HYLAND: So the new one will get
18 you more coverage?

19 MR. FEEHAN: Yes.

20 MS. ROMANO: The second overlay, the
21 top area, is it now double green coverage? When you
22 put it down, it seems like it's a dark green.

23 MR. FEEHAN: That's when they are
24 overlaying. The reason is, because our proposed
25 facility is pretty much at the top of a ridgeline

1 and to the northeast when I described the area, that
2 slopes downhill.

3 MS. ROMANO: It's not going to
4 interfere with the other towers that are giving
5 coverage to the upper part of that overlap?

6 MR. FEEHAN: It's something that we
7 would have to be cautious about. As I said before,
8 you don't want two facilities competing for the same
9 area. It's kind of like you have to find the best
10 way to cover it. Sometimes there's a little bit of
11 an issue so it's something we have to mitigate. You
12 do that by down-tilting and trying to prevent
13 coverage from going too far in that direction.

14 DR. EISENSTEIN: How did you come up
15 with the 150-foot height?

16 MR. FEEHAN: I believe it was so that
17 you can clear -- there's very tall trees in Chatham.
18 I don't know the exact number. It looks like 90 to
19 100 feet from driving around.

20 DR. EISENSTEIN: Are they near the
21 tower?

22 MR. FEEHAN: I think they are about
23 90. I drove by there today. It's very difficult to
24 see the temporary facility at 100 feet. You have to
25 get to where there's a break. As I said, it goes

1 uphill pretty much every other direction except
2 northeast. In order to try to clear those trees as
3 best you can, I believe the ordinance allows up to a
4 150-foot monopole.

5 DR. EISENSTEIN: Jumping ahead, your
6 next exhibit is this site standing alone. It looks
7 like you have a large amount of duplicative coverage
8 with the NJ06689.

9 MR. FEEHAN: Yes.

10 DR. EISENSTEIN: On the bottom to the
11 southwest of the site or south of the site, the
12 signal seems to drop abruptly, which means there's a
13 ridge?

14 MR. FEEHAN: Yes.

15 DR. EISENSTEIN: What benefit do you
16 get from the extra height because you are going to
17 be stopped by that ridge anyway and getting
18 duplicative coverage to the north. Had you looked
19 at going to 120 or 125 feet?

20 MR. FEEHAN: I briefly looked at that.
21 I did not get too deep into that.

22 DR. EISENSTEIN: Did you propagate it?

23 MR. FEEHAN: I don't have that here,
24 no.

25 DR. EISENSTEIN: I'm asking if you did

1 it.

2 MR. FEEHAN: I did propagate it, yeah.
3 As you would imagine, it gets less as you go
4 shorter.

5 DR. EISENSTEIN: I understand. You
6 are duplicating coverage on the other side. You are
7 stopped by that ridgeline so the extra height does
8 you no good at all. I will request that we do a
9 height analysis and we look at what the coverage
10 would be at different heights. The 150 sounds high
11 to me. In recent times, I haven't seen a pole that
12 high. It used to be years ago but I'm seeing most
13 around 120 or 130.

14 MR. FEEHAN: The one thing I can say,
15 the coverage to the northeast didn't seem to change
16 all that much because it slopes downhill. I believe
17 there's about a 90-foot or greater difference
18 between our proposed site and the site to the
19 northeast, NJ6689A, so that allows us to cover a
20 little further to the south and west and east. To
21 the northeast, from what I saw, it didn't make too
22 much of a difference because of the sharp slope
23 down.

24 DR. EISENSTEIN: To the northwest of
25 your site, you have a gap area there. What are your

1 plans for that?

2 MR. FEEHAN: To try to remedy that gap
3 in the future. I don't have a current location for
4 that right now. It's in the search area to try to
5 find something to alleviate that gap.

6 DR. EISENSTEIN: Would it be possible
7 on the proposed site to reorient your antennas so
8 they face more northwest and not northeast where you
9 are getting the duplicative coverage?

10 MR. FEEHAN: I'll tell you the exact
11 azimuth. I believe one is pointing to the northwest
12 in the area.

13 Q. Would you explain what "azimuth" is?

14 A. The direction the antenna is pointing
15 relative to absolute north. If you look at Exhibit
16 A-11, it's straight up.

17 CHAIRMAN VIVONA: I think another
18 reason for the height is so the pole can accept
19 three carriers too. If it's only 120 feet...

20 MR. FEEHAN: Yeah. I didn't finish
21 that. I was talking about how the trees are about
22 90 to 100 feet high and going uphill in other
23 directions so for a third carrier at 126 feet, that
24 would put you about 20 feet above a 100-foot tree
25 line. Going further than that, you are going to

1 have a lot of difficulty doing much at that level.

2 The direction, the azimuth, is 260
3 degrees. Directly left would be 290 so the azimuth
4 right now --

5 DR. EISENSTEIN: How about 270?

6 MR. FEEHAN: Yes, 270. And 260 is 10
7 degrees less so 10 degrees counterclockwise. It's
8 pointing west, not directly northwest, a little west
9 with a little south into it.

10 DR. EISENSTEIN: I would suggest you
11 point it northwest at 290. It looks good to me.

12 MR. FEEHAN: That can be accommodated
13 when the site gets approved and gets built. It goes
14 into an optimization phase and lots of tests are
15 performed and you try to balance the coverage as
16 best you can, which would be along the lines of
17 tilting the antennas towards a better direction,
18 such as Dr. Eisenstein said.

19 DR. EISENSTEIN: Right now, you are
20 doing a presentation for T-Mobile. For just
21 T-Mobile, do they need their antennas at a 146-foot
22 center line?

23 MR. FEEHAN: I would say their
24 required would be 126 feet so I would say, not
25 required for 146.

1 DR. EISENSTEIN: Shortly, we are going
2 to talk about Verizon. Does Verizon Wireless need
3 them at a 136-foot center line?

4 MR. FEEHAN: I would say, to provide
5 similar coverage, 126.

6 DR. EISENSTEIN: So presumably, you
7 could build this tower right now for your two
8 applicants at 126 and 136, not 150. Then, if a
9 third collocator came along, they could assert their
10 rights under 6409, the Middle Class Tax Relief Act,
11 and extend the tower and get the extra height. If
12 they don't come along, you just have the lower
13 height. From a radio frequency point of view,
14 forgetting anything else, you have no problem with
15 that?

16 MR. FEEHAN: I think that would not
17 make a significant impact.

18 DR. EISENSTEIN: If you are willing to
19 stipulate that, I'm not going to ask you for the
20 additional propagation plots; otherwise, I would.

21 MR. SHAW: I assume the tower is
22 designed so, some point in time, if you want to put
23 20 feet on top of it...

24 DR. EISENSTEIN: That would be the
25 next step. They would have to design the foundation

1 and the bottom of the pole so, at some later time,
2 they could extend it. These towers are easy -- I
3 don't want to say "easy" because I don't ever have
4 to do it myself. For the people that do it, it's
5 not difficult. They raise a crane with a can and
6 drop it into place and bolt it down.

7 MS. KNARICH: Can we take a break?

8 DR. EISENSTEIN: Who is going to do
9 your compliance testimony?

10 MS. KNARICH: Pinnacle.

11 DR. EISENSTEIN: Terrific. All right.

12 (Recess taken)

13 CHAIRMAN VIVONA: All right. We are
14 back on.

15 FURTHER DIRECT EXAMINATION BY MS. KNARICH:

16 Q. Before we move on to Verizon Wireless,
17 do you want to do a history of the site for
18 T-Mobile?

19 A. I have been calling it a "coverage
20 gap." To refresh the Board, this site was
21 previously on a PSE&G lattice tower for 15 years ago
22 up to about 5 years ago and through the transition
23 of PSE&G replacing their lattice for monopole-style
24 towers, the temporary has been there for about 5
25 years so it's not really a new facility that's never

1 been there before.

2 When I talk about a gap in coverage,
3 this is just -- it's filling a coverage gap which is
4 only there because of the site which was there being
5 removed.

6 Q. So it's safe to say, once that goes
7 down, the temporary tower, there will be a gap that
8 would need to be replaced with coverage?

9 A. Yes.

10 MR. HYLAND: And the lattice tower was
11 to the east of the church?

12 MS. KNARICH: Within the utility
13 corridor.

14 MR. HYLAND: Immediately to the east
15 or a mile down the road, one way or the other?

16 MR. FEEHAN: Pretty much to the east.

17 MR. WILLIAMS: How many feet from
18 where you are now?

19 MR. FEEHAN: It's the most recent
20 tower.

21 MS. KNARICH: You referring to the old
22 or new?

23 MR. BORSINGER: The lattice to where
24 you are listing it now.

25 MR. FEEHAN: Our engineer is marking

1 it now.

2 MR. COTTRELL: It's 170 feet.

3 MR. HYLAND: So this now is 170 feet
4 west of the tower from six years ago?

5 MR. COTTRELL: Yes.

6 DR. EISENSTEIN: Along those lines,
7 did they take that old lattice tower down?

8 MR. FEEHAN: Yes. They have been
9 replaced with the monopole-style towers. They have
10 the two arm sets that come out and hold the power
11 lines.

12 DR. EISENSTEIN: I'm looking at a
13 photograph from 2013. It shows the lattice tower
14 standing.

15 MS. KNARICH: I think the older towers
16 are still --

17 CHAIRMAN VIVONA: There's two sets.

18 DR. EISENSTEIN: Is the other lattice
19 tower still functioning, the one that is remaining?

20 MS. KNARICH: For now.

21 DR. EISENSTEIN: It still has wires so
22 it's the easternmost one that they took down and
23 replaced the monopoles?

24 CHAIRMAN VIVONA: Correct. The entire
25 line and the lattice towers are 50 feet shorter than

1 the monopoles. The monopole towers now are 146 --

2 MR. SHAW: 140.

3 MS. KNARICH: A 10-foot difference
4 from what we are proposing.

5 A. I wanted to briefly go over that
6 before we go to Verizon Wireless from T-Mobile.

7 CHAIRMAN VIVONA: You are not on the
8 temporary pole; it's just AT&T?

9 MR. FEEHAN: Are you talking about
10 Verizon Wireless?

11 MR. SHAW: T-Mobile is on the
12 temporary.

13 CHAIRMAN VIVONA: That's right.

14 (Exhibit A-12, Verizon Wireless existing
15 and proposed coverage, was marked for
16 Identification.)

17 A. This is Verizon Wireless existing and
18 proposed coverage and the date is 5/3/17. I'll
19 briefly describe it. This is the same view I showed
20 for Exhibit A-10. The only thing that's different
21 is the sites are Verizon Wireless facilities instead
22 of T-Mobile but the view is the same of the
23 topographic map, the same zoom level and center and
24 corners.

25 So for the record, the top right of

1 the exhibit has Route 24, the jughandle. The bottom
2 right is the intersection of Kent Place and Passaic
3 Avenue. The bottom left of the exhibit is Fairmont
4 Avenue. The top left of the exhibit is Green
5 Village Avenue. That shows in the top left. It
6 slopes down to the northeast and uphill in the other
7 direction west, south, southeast, basically all the
8 other directions. We are on Shunpike Road just east
9 of the Chatham High School, Cougar Field, surrounded
10 by suburban uses in the neighborhoods, single-family
11 homes.

12 These are the existing sites on this
13 exhibit. The top left, you see the facility labeled
14 with the purple dots. Those are existing
15 facilities. You see Madison 2, a monopole on Kings
16 Road, a collocation with T-Mobile. The next site
17 clockwise is Florham Park 2; that is a PSE&G tower
18 near Delbarton Street and Brook Lake Road. Florham
19 Park 3, that's Route 24 jughandle; it's a monopole.
20 We have two on Main Street. One is Chatham
21 Downtown; that is a rooftop on 249 Main Street and
22 just east is Chatham 97 Main Street, a rooftop on 97
23 Main Street. You see Watchung Avenue ETT; that's on
24 the lattice power line tower on Watchung Avenue. We
25 have the site labeled Summit 4; that's a monopole at

1 3 Constantine Place. Continuing to the west, you
2 see New Providence 2, a monopole on River Road. To
3 the north, a site labeled Chatham, there's a lattice
4 tower at 401 Southern Boulevard and there is a
5 maroon-colored dot representing a future Verizon
6 Wireless facility. That's labeled as Chatham 3.
7 That is a PSE&G tower proposed there some time in
8 the future near River Road. In the center of the
9 exhibit, we have our proposed site, Chatham 4, at
10 300 Shunpike Road.

11 The first overlay is going to show the
12 existing coverage in green. The green area is the
13 reliable suburban coverage. It's basically the same
14 type of level of coverage for T-Mobile. This is the
15 level of coverage required to get coverage inside a
16 suburban or a single-family type home. As you can
17 see, there's a gap present in our immediate
18 surroundings and also around -- a little larger than
19 the other one because there's no facility to the
20 southwest. T-Mobile has a facility located near the
21 future Chatham 3 on Exhibit A-12 but Verizon
22 Wireless does not have one there yet.

23 DR. EISENSTEIN: Is Chatham 3 approved
24 but not running yet? What's the story?

25 MR. FEEHAN: I believe it is -- from

1 my recollection, it's not approved yet.

2 MS. SMITH: We have an application
3 there. I believe it's being reviewed by engineering
4 and not ready for the Board.

5 MR. SHAW: That's a T-Mobile
6 application.

7 MS. SMITH: It's a collocation.

8 MR. SHAW: I think it's T-Mobile.

9 DR. EISENSTEIN: T-Mobile has a site
10 there.

11 MR. FEEHAN: The site on the exhibit
12 -- let me look at it.

13 DR. EISENSTEIN: I'm looking at it
14 now. T-Mobile has a site nearby.

15 MR. FEEHAN: 6631F, that's a temporary
16 facility which has been approved to go onto the
17 nearby PSE&G tower. It's built and everything is
18 there. They are awaiting a coordination effort to
19 power things down and power things up again.

20 DR. EISENSTEIN: Is that the same
21 tower or a different tower than Chatham 3 for
22 Verizon?

23 MR. FEEHAN: I believe it's different.
24 The Chatham one is a little more to the southwest.
25 If we look at the two exhibits side by side, you can

1 look at the dividing line, Southern Boulevard. The
2 T-Mobile facility NJ06631F is to the northeast of
3 the Southern Boulevard and Chatham 3 on Exhibit A-12
4 is to the southwest of Southern Boulevard. It's a
5 little further to the southwest for Verizon Wireless
6 for a future facility.

7 DR. EISENSTEIN: If you look again at
8 the site that is on Verizon Wireless labeled
9 "Chatham" and the site that's on T-Mobile, which is
10 NJ06301, is that -- are they the same site?

11 MR. FEEHAN: I believe so. I can
12 confirm. Yes. Different antenna heights. T-Mobile
13 has an antenna height of 100 feet and Verizon
14 Wireless has 130.

15 DR. EISENSTEIN: What I don't
16 understand is, T-Mobile seems to be getting better
17 coverage out of their site than Verizon Wireless at
18 a lower height at the same frequency.

19 MR. FEEHAN: I wouldn't agree to that.
20 In the T-Mobile propagation, there is a facility,
21 6631F, that is providing coverage in that direction
22 so they are joining and also, they have different
23 planned azimuths at that facility so I wouldn't
24 expect the coverage to be the same because they have
25 different objectives because there are sites that

1 surround them. You need to balance appropriately.

2 DR. EISENSTEIN: I'm trying to
3 understand your gap over here. Tell me again about
4 6631F.

5 MR. FEEHAN: Currently, it is a
6 temporary facility. I'm referring to Exhibit A-11.
7 It's currently a temporary facility. It's on School
8 Avenue. That currently has been constructed and
9 it's been approved. It's being relocated back on
10 the power lines. It's already there, the equipment.
11 I'm not 100 percent sure if the antennas are up.
12 They need to coordinate an effort to power down the
13 lines and put the antennas on and turn off the
14 temporary site and turn on the permanent site on the
15 power line. So currently, the coverage you are
16 seeing is the temporary but the difference in
17 heights are not that different. That's why I'm
18 showing the coverage from the temporary.

19 DR. EISENSTEIN: Okay.

20 A. Back to our Exhibit A-12, we see a
21 large coverage gap located in the vicinity of
22 Chatham 4 and Chatham 3. Chatham 3 has its own
23 goals so I'm not going to identify the gap specific
24 to that. There are some areas that are close. I'm
25 not going to include the entire southwest section of

1 our gap because that is something Chatham 3 will
2 handle.

3 The area in which the coverage gap
4 exists for Verizon Wireless is shown by the first
5 overlay in Exhibit A-12. It's in the following
6 places: Shunpike Road from Candlewood Drive to
7 Fairmont Avenue, it's about 2 miles; Lafayette
8 Avenue, 8,000 feet; Maple Street and Spring Street,
9 about 1500 feet each; Pine Street, about a half a
10 mile; Rose Terrace, about a half a mile; Noe Avenue,
11 about a half mile; Woodland Road from Lafayette to
12 Garfield, about 1.4 miles; Southern Boulevard from
13 Robert Drive to Fairmont Drive, about 1 mile and
14 Chatham High School/Lafayette School.

15 DR. EISENSTEIN: Just for the record,
16 Southern Boulevard is not in the gap area for
17 Chatham 4.

18 MR. FEEHAN: It's located near Chatham
19 3. It would be something that Chatham 3 would
20 handle. Is that what you are referring to?

21 DR. EISENSTEIN: Yes.

22 MR. MICHAELS: You mentioned the
23 coverage going as far as Candlewood but it's not
24 showing on the overlay.

25 MR. FEEHAN: This is the gap in

1 coverage.

2 MR. MICHAELS: Okay. I see.

3 MR. FEEHAN: The next will be the
4 proposed from the proposed facility. That will show
5 the areas in which the gap is filled.

6 A. We see the proposed coverage from
7 Chatham 4. I'll identify the areas in which the gap
8 is alleviated. Half of Shunpike from Watchung to
9 Candlewood, that's about 1 mile; half of Lafayette
10 Avenue, about 6400 feet, maybe 6,000 feet; almost
11 all of Maple Street; all Pine Street, about a half
12 mile; all of Rose Terrace, about a half mile; half
13 of Noe Avenue, half of Woodland Road from Lafayette
14 to Garfield, about .7 miles, and some of Chatham
15 High School would be covered as well. That's the
16 areas which the proposed facility will provide
17 coverage to and alleviate the gap in those areas.

18 DR. EISENSTEIN: In A-12, the second
19 overlay compared to A-11's second overlay, T-Mobile
20 gets better coverage, particularly along Shunpike,
21 because they are higher on the tower; is that
22 correct?

23 MR. FEEHAN: Yes, it's because they
24 are higher along the tower and different azimuths
25 that they have chosen. T-Mobile chose to go

1 directly down Shunpike while Verizon Wireless has
2 chosen to put that area between two antennas in the
3 null of their antennas, which means that there's one
4 antenna sector pointing to the left of Shunpike and
5 another pointing to the right of Shunpike so an
6 antenna is not directly pointing down Shunpike Road
7 for Verizon Wireless.

8 DR. EISENSTEIN: They also have the
9 duplicative coverage to the north.

10 MR. FEEHAN: Yes. A little less
11 because of their chosen azimuths.

12 DR. EISENSTEIN: I notice Verizon
13 Wireless also has two small sites to the east.

14 MR. FEEHAN: Yes. Chatham Downtown
15 and 97 Main Street.

16 DR. EISENSTEIN: What are they on,
17 rooftops?

18 MR. FEEHAN: Yes. Those are small
19 cells.

20 MS. ROMANO: We can't do that anymore,
21 any rooftops?

22 MR. FEEHAN: There are no rooftops
23 available that would be able to cover -- to be able
24 to be above the tree line in that area. As I said,
25 they are about 90 --

1 MS. ROMANO: I guess, Downtown,
2 there's more flat area so that's why they can be
3 there?

4 MR. FEEHAN: The Downtown facilities
5 are specifically to cover the buildings on that
6 street. As you can see, it's significantly smaller
7 than our proposed coverage or any of the surrounding
8 macro facilities.

9 Q. Those are utilized to cover between the
10 gaps that are not able to cover -- the larger gaps
11 that are needing coverage?

12 A. Yes.

13 That's all I have for Verizon
14 Wireless.

15 MR. WILLIAMS: This is the same
16 coverage that we would have had for Pine Street?

17 MR. FEEHAN: Sorry. What's the
18 question?

19 MS. KNARICH: The one on Pine Street,
20 is that the same gap?

21 MR. WILLIAMS: You were not involved
22 in that, I guess.

23 MR. FEEHAN: You are talking about a
24 previous application? I believe that is the one
25 that was denied?

1 MR. SHAW: Yes.

2 MR. FEEHAN: This is still the same
3 area that they are trying to address.

4 MR. SHAW: Both of these propagation
5 maps would be valid if the heights for the antenna
6 would be 126 and 137 feet?

7 MR. FEEHAN: Yes.

8 MR. SHAW: Okay.

9 MR. BORSINGER: The coverage with the
10 97 in-house, is that 4G or 3G?

11 MR. FEEHAN: That's specifically
12 referring to 4G LTE coverage.

13 MR. BORSINGER: Aren't they coming out
14 with 5G now?

15 MR. FEEHAN: I don't know if it's
16 tomorrow. It's being developed. It's not in the
17 immediate future.

18 MR. BORSINGER: Does that have any
19 implication with the coverage?

20 MR. FEEHAN: They are different
21 frequency bands. I believe 5G -- it depends on
22 which carriers get assigned which frequencies. They
23 have to purchase them from the FCC. Once those
24 technologies are available and it becomes
25 readily-used by the carriers, they will put them in

1 the existing sites where needed. 5G is going to be
2 able to handle, according to the research, much
3 faster data transmission and more capacity.

4 MR. BORSINGER: But you do not
5 anticipate coming back and saying "We need more
6 towers"?

7 MR. FEEHAN: I'm not sure. That would
8 be a question for when the time comes. My personal
9 belief, in the immediate future, when it does get
10 developed, it would be something to address
11 capacity. What I mean is, areas that are densely
12 populated, you would put those newer 5G sites to
13 handle the amount of usage that people are trying to
14 use because it's a bigger pipe and you can fit more
15 data through a bigger pipe.

16 MS. KNARICH: More for urban areas?

17 MR. FEEHAN: Yes.

18 That's all future and it doesn't exist
19 yet, to make it clear.

20 MS. KNARICH: I have no further
21 questions of this witness. If the Board has any
22 other questions...

23 CHAIRMAN VIVONA: Any more questions
24 for Mr. Feehan?

25 (No response)

1 CHAIRMAN VIVONA: At this time, this
2 is questions about Mr. Feehan's testimony.

3 MR. CORELLA: Does this one show the
4 existing tower?

5 MR. FEEHAN: You are referring to the
6 existing temporary T-Mobile facility?

7 MR. CORELLA: Yes.

8 MR. FEEHAN: This is Verizon Wireless
9 so I'll put up the T-Mobile, Exhibit A-11. The two
10 overlays are the existing coverage without the
11 temporary facility and the proposed coverage from
12 the new facility. It does not show the current from
13 the temporary, no.

14 MR. CORELLA: If these antennas were
15 to be put back up on the Public Service tower, the
16 new ones that are there, why couldn't you guys do
17 that?

18 MR. FEEHAN: From a radio frequency
19 perspective, the heights are similar and it would be
20 fine to put them there. We are on this location
21 because we are directed to go here. I believe we
22 were directed by the Board to go to the temporary
23 location to turn it into a permanent location.

24 MR. CORELLA: Why build all this stuff
25 and cause us all this problem if you could go back

1 on the tower that it was originally? It would save
2 you guys a fortune.

3 CHAIRMAN VIVONA: They tore town the
4 towers originally. The new tower is in a Wetlands
5 so they are not allowed by the DEP to put antennas
6 on it. The other antennas on the tower across
7 Shunpike have been approved so there will be
8 antennas on those and the one on Pine Street was
9 denied because it was 50 feet from a house and
10 there's strong neighborhood opposition, just like
11 every cell tower application.

12 MR. CORELLA: But they put the tower
13 in the Wetlands that they are putting it now.

14 CHAIRMAN VIVONA: They cannot.

15 MR. CORELLA: They said there's
16 Wetlands around that proposed site that is there
17 now, the temporary tower.

18 CHAIRMAN VIVONA: No. The Wetlands
19 are not at the tower. It's within 150 feet of the
20 Wetlands you can't disturb. The Wetlands are in the
21 utility corridor where the power line is and they --
22 they are not involved with the Wetlands at that site
23 but to run the gas line on that side could encroach
24 on the Wetlands, the buffer.

25 MS. WELZ: Just so I'm clear, where

1 was the temporary tower taken off of? Where was
2 that power line site where it was taken off of
3 originally?

4 CHAIRMAN VIVONA: Directly west --
5 east. Now, there's a new monopole that used to be
6 the lattice style on that and when they took down
7 all the lattice style power lines, that's where most
8 of all the cell tower things were. Several of the
9 lattice towers had antennas on them. When they took
10 the towers down, everybody had to move to another
11 location or temporary location or collocate wherever
12 it was possible. When they put the new poles up,
13 they were designed to handle 42 wires that go up the
14 antennas. The antennas each take two wires which
15 means there's 24 antennas and these companies
16 require more than that so we cannot collocate on
17 PSE&Gs towers, not their fault.

18 MS. WELZ: In terms of west, was that
19 feet or -- you said it was west. I'm trying to get
20 an idea how far.

21 CHAIRMAN VIVONA: 170 feet from the
22 temporary tower to where the old lattice tower was.

23 MR. FEEHAN: It's to the east, to
24 clarify.

25 MR. CORELLA: Couldn't it be put on

1 one of the towers up further or down further so it's
2 not in the Wetlands?

3 CHAIRMAN VIVONA: The problem is, the
4 propagation that -- the towers further down are
5 lower in topography so it wouldn't --

6 MS. KNARICH: Achieve the coverage
7 that we are trying to achieve.

8 MR. CORELLA: What about the one going
9 up?

10 CHAIRMAN VIVONA: There's one on that
11 one already.

12 MR. WELZ: There's multiple towers
13 going up.

14 CHAIRMAN VIVONA: They only cover a
15 certain distance so putting a tower where it's not
16 going to be doing any good --

17 MR. WELZ: Well, it was originally
18 going to go up as far as Pine Street.

19 CHAIRMAN VIVONA: Right. That's why
20 we are thinking about the additional height because
21 it would get the coverage without having to put cell
22 towers on every pole. Also, by the extra height, we
23 are hoping to get three contractors collocated on
24 one thing so we don't have three separate towers.
25 That's part of our reasoning. So they would build

1 one and Verizon and AT&T and instead of one tower,
2 you have three all in the same area.

3 MR. WELZ: So instead of utilizing
4 what you have, they are going to build a tower?

5 CHAIRMAN VIVONA: Right.

6 MR. WELZ: That doesn't seem logical
7 to me when you have the PSE&G tower.

8 CHAIRMAN VIVONA: Right. They looked
9 into putting it on that tower but the DEP would not
10 let them put -- do any other construction besides
11 the actual power lines because of the Wetlands.
12 They wanted to go on that. They are not allowed
13 from the DEP. That's why several of the monopoles
14 can't be used, the power poles, because there's
15 Wetlands. You have the swamp and all that land that
16 can't be used for this application.

17 MR. WELZ: So the DEP trumps --

18 CHAIRMAN VIVONA: Yes.

19 MS. WELZ: Backtracking, we were
20 speaking before about being 0 feet away from the
21 church; am I correct?

22 CHAIRMAN VIVONA: No. It's within --
23 the reason it says that is because it was within the
24 church's property.

25 MR. WELZ: Which is a residential

1 property?

2 CHAIRMAN VIVONA: Correct.

3 MR. SHAW: Zone.

4 MS. WELZ: It has to be 50 feet from a
5 residential zone.

6 CHAIRMAN VIVONA: No. The reason it
7 says that is because it is on the church's property.
8 If it was next to the church's property, it has to
9 be 50 feet from the edge of the church property to
10 the property that they own, which they don't own;
11 the church owns it. I was confused about that
12 myself.

13 MS. WELZ: So there is no law saying
14 it can't be on the church's residential property?

15 CHAIRMAN VIVONA: Yes.

16 MS. WELZ: There is no law?

17 MR. SHAW: There's plenty of laws.

18 MS. WELZ: I'm trying to understand,
19 like, if this is something that is allowed to be on
20 this residential property.

21 MS. KNARICH: I can clarify that. The
22 relief we are seeking before this Board is a use
23 variance because it's not a permitted use within the
24 zone, the residential zone. We are before this
25 Board seeking relief as a D-1 for the ability to

1 place this tower in the residential zone.

2 MS. WELZ: So what she is saying, it's
3 definitely not allowed but they want to get
4 permission to intrude on the property?

5 MS. KNARICH: Which is why we are
6 presenting proofs in support of that relief.

7 MR. CORELLA: I guess the Board feels
8 it's a good thing to do?

9 MR. SHAW: We have to have a hearing.
10 That's why we are here.

11 CHAIRMAN VIVONA: Any other questions
12 for Mr. Feehan?

13 MS. CORELLA: Patricia Corella, 312
14 Shunpike.

15 I want to know if there's any way we
16 can curtail this compound from getting any bigger.

17 MR. SHAW: The way the law is written,
18 you are allowed to collocate on property so once a
19 site is approved, under the New Jersey law, another
20 cellular company can come in and make an application
21 for collocation and I think we heard from Dr.
22 Eisenstein, someone -- if this was approved at 136
23 feet for these two current users, the future
24 collocater on the site would, by statute, be allowed
25 to do so and to construct additional height on top

1 of the tower but they would have to come back to the
2 Board to basically get site plan approval for that.

3 MS. KNARICH: To that end, Dr.
4 Eisenstein referred to the AT&T equipment that's
5 currently there. That has to go away because they
6 are not in this location. That's going to be within
7 this compound.

8 MS. CORELLA: If this tower is 150
9 feet, somebody could come by and apply to have it
10 even higher?

11 CHAIRMAN VIVONA: No.

12 MS. KNARICH: No.

13 MR. SHAW: No. I think we're talking
14 about having the height reduced currently to 136 but
15 a collocator would be allowed to go up to 20 feet
16 higher.

17 CHAIRMAN VIVONA: But the compound
18 will not grow, it's designed for three.

19 MR. CORELLA: So now, if the tower
20 were higher, would it cause less effect to the
21 people and everything around the area if these
22 machines and towers and microwaves were put up
23 higher or is it a fact that, if it's lower, it
24 causes more problems for people and wildlife?

25 MS. KNARICH: Could you elaborate on

1 what you mean by "problems"?

2 MR. CORELLA: Health problems.

3 MS. KNARICH: That can't be considered
4 by this Board.

5 MR. SHAW: I think that is a question
6 for, perhaps, Dr. Eisenstein.

7 DR. EISENSTEIN: Wait until the
8 compliance person testifies. That's the appropriate
9 place to raise that issue.

10 MR. SHAW: There's a radio frequency
11 compliance person.

12 MR. FEEHAN: We were talking about the
13 height reduction, I think 136. I was talking about
14 the center line, so we are clear.

15 DR. EISENSTEIN: I understand. It's
16 going to be 140. I understood that.

17 CHAIRMAN VIVONA: Any other questions
18 for Mr. Feehan?

19 (No response)

20 J O S E P H M E N I O, first having been duly
21 sworn, testified as follows:

22 MR. MENIO: My name is Joseph Menio.
23 I'm with Pinnacle Telecom Group. I have a
24 Bachelor's in information systems from NJIT. I have
25 over 14 years of experience in the wireless design

1 industry as well as FCC compliance. I have been
2 sworn as an expert before hundreds of Boards and,
3 specifically, this Board and I have also testified
4 many times in front of Dr. Eisenstein.

5 MS. KNARICH: I would like to qualify
6 him.

7 CHAIRMAN VIVONA: Okay.

8 DR. EISENSTEIN: Dan Collins signed
9 the report that you put in. I assume that you work
10 under his supervision, rather than the other way
11 around?

12 MR. MENIO: Correct.

13 DR. EISENSTEIN: You agree with
14 everything in the report and what he signed there?

15 MR. MENIO: Correct.

16 DIRECT EXAMINATION BY MS. KNARICH:

17 Q. The FCC compliance assessment report
18 was submitted with the application.

19 MR. SHAW: It's in the application
20 package.

21 Q. You were involved with the preparation
22 of this compliance report?

23 A. Yes.

24 Q. Could you just briefly describe to the
25 Board or review for the Board what this report

1 entails?

2 A. The report entails, basically, the FCC
3 guidelines. Now, the FCC got together with a whole
4 bunch of different groups, OSHA, the National
5 Council on Radiation Protection, the National
6 Institute for Occupational Safety, the American
7 National Standard Institution, the Environmental
8 Protection Agency, the FDA, and they also took input
9 from the public as well as the Institute for
10 Electrical Engineering, and what they came up with
11 is a set of formulas that allows the carrier to test
12 their site if it's in compliance. Much what those
13 formulas state is, if you meet up to 100 percent of
14 their given levels, it is deemed to be within the
15 standards; it's safe.

16 So these standards take into effect,
17 basically, scenarios that are almost never going to
18 happen, some impossible, that the carrier is
19 transmitting full capacity, full power 24/7 and that
20 the surrounding area is 100 percent reflective so
21 that means everything that's shot out can get
22 bounced back. It also takes into account a bunch of
23 factors that amplify the safety. When you take it
24 all said and done, it's a 50-times fudge factor put
25 in to make it that much safer than what they are

1 calculating.

2 When we run those calculations for
3 this site including T-Mobile and Verizon at full
4 capacity with full reflection, this site is 0.6733
5 so it's a little over half of 1 percent of a level
6 which 100 percent is deemed safe so in other words,
7 this is 148 times safer than what the FCC has deemed
8 to be within compliance.

9 New Jersey has their own Occupational
10 and Health Safety Act but for some reason, it's less
11 stringent than the FCC guidelines by a factor of 5
12 so this site 740 times the level deemed safe by New
13 Jersey.

14 MR. HURRING: If we added in a third,
15 we would still be under 100 percent.

16 MR. MENIO: I would say at most, 2 or
17 3 percent because the third carrier gets lower on
18 the tower so the lower -- the more distance you have
19 from the ground elevation, the less the level so I
20 would say three-carrier poles, they are maybe 2 to 3
21 percent, if that.

22 A. To put those numbers into perspective,
23 my firm has done over 200 measurements within
24 kitchens and apartments and different households and
25 if you are sitting in your kitchen and you have a

1 microwave or a fridge running, the ambient radio
2 frequency level is 2 to 7 percent of what the FCC
3 deems to be safe.

4 Q. Compared to this?

5 A. Yes. Which is barely over a half a
6 percent.

7 Q. What about somebody speaking on their
8 cell phone?

9 A. I don't have the numbers for that off
10 the top but it's more than what you are receiving
11 standing at the bottom of this tower.

12 MR. HYLAND: So the government set up
13 a bunch of levels and anything under those levels is
14 deemed safe?

15 MR. MENIO: I'm no doctor but the
16 formula is set up to take in effect how quickly your
17 body can get rid of heat. That's what radio
18 frequency does; it will heat you up from the inside.
19 The formula is based upon how quickly the body can
20 dissipate heat. It takes into account the most
21 sensitive parts of the body and it takes into
22 account a child or older person in the realm of
23 saying "It's safe for everybody."

24 MR. HYLAND: So you are using less
25 than one unit of a possible 100 units of safety.

1 MR. MENIO: Correct.

2 CHAIRMAN VIVONA: And these are
3 designed to be at the bottom of the tower?

4 MR. MENIO: Correct.

5 DR. EISENSTEIN: What distance from
6 the tower was your worst-case scenario? You have a
7 diagram on Page 9 of your report but it doesn't show
8 where the maximum occurs. It's not under the tower,
9 by the way. That is among the lowest places you can
10 be.

11 MR. MENIO: The level of .6733 is 120
12 feet out from the tower.

13 DR. EISENSTEIN: For a 6-foot-high
14 person?

15 MR. MENIO: 6-1/2 foot.

16 DR. EISENSTEIN: A basketball player?

17 MR. MENIO: Yeah. Because if you were
18 taller, your eyes and head are in that area so I
19 have a good safety buffer.

20 MR. BORSINGER: There's no accounting
21 for cumulative effect from electromagnetic from a
22 280,000-volt tower.

23 MR. MENIO: Those are not deemed to be
24 within the standards, no.

25 Q. Is it your testimony that the total

1 maximum emissions level is far below any exposure
2 limits that would be imposed by state or federal
3 regulations?

4 A. That's correct.

5 MS. ROMANO: Are these results given
6 off of everyday use where it's not like someone is
7 encountering this once a week; it's every day?

8 MR. MENIO: Yes, these are for someone
9 standing there for eternity at full blast, which is
10 almost -- every carrier to line up every channel and
11 every frequency to come out at full power is so rare
12 and furthermore, it's also taking into account that
13 there's nothing between the person and the tower so
14 there's no trees, no branches, nothing that could
15 take some of the loss and furthermore, it's also
16 taken into account that the ground is 100 percent
17 reflective, anything that the tower is putting out
18 is being reflected right back up from the ground and
19 not absorbed.

20 MR. HYLAND: What is the ground in
21 terms of reflective, 30, 80 percent?

22 DR. EISENSTEIN: Depends on the
23 moisture content of the ground.

24 MR. MENIO: Correct. I don't have the
25 actual number to give a reliable answer for that but

1 it's nowhere near 100. It's a metal plate that's
2 reflecting it.

3 MR. HURRING: What would frozen snow
4 be?

5 MR. MENIO: It would be lower because
6 it's moisture and it's wet.

7 MR. HYLAND: Maybe we should put it in
8 the Wetlands then?

9 DR. EISENSTEIN: So the record is
10 clear, you used FCC Bulletin OET65 to do your
11 calculation?

12 MR. MENIO: Correct.

13 CHAIRMAN VIVONA: We have heard this
14 testimony on all of our cell tower applications.

15 MR. SHAW: How does this relate to any
16 comments or concerns relative to health issues?

17 DR. EISENSTEIN: They are so far below
18 anything that would be a concern. When the FCC said
19 that, they were already at a factor of 1,000 below
20 what they -- so they took where they saw potential
21 harm could occur and went a thousand under that and
22 said "That is our standard" and that's what they
23 call the "100 percent level." You are almost 100
24 times under that, more than 100 times under that, so
25 you are like 100,000 off from where any harm could

1 conceivably be caused.

2 For the benefit of the public, I teach
3 this material at the University. About 20 years ago
4 or so, I would have taught my students that this
5 level of radiation is too low to be usable so we
6 would be ignoring it. We would have worked at a
7 much higher level. Also, cell phones seem to be new
8 to the public. They have been around for 30 years
9 in some general acceptance. Remember, it's the same
10 radiation you get from FM radio stations, television
11 stations, radio, AM station. They are just using
12 different frequency bands but those things have been
13 around since the 1920s and the radio and television
14 stations are broadcasting at 100,000 watts, 50,000
15 watts for some of the others; whereas, this is a
16 20-watt output so it's so much lower in terms of the
17 power it's putting out to begin with.

18 We have had extensive experience with the effects of
19 this kind of electromagnetic waves. He is correct
20 when he says this is non-ionizing radiation. That
21 means it can't cause anybody harm.

22 The only harm that comes from
23 microwaves is the heat. We all understand that you
24 have a microwave oven and do not try this or
25 experiment with it. If somehow, if you were inside

1 the microwave oven, you would be hurt but you are
2 looking at, that would be 1,000 watts at practically
3 no distance when you are in there. The numbers that
4 he was talking about before, -97 dBm, to put that in
5 perspective, that is 1/10 billionth of a milliwatt
6 which is 1,000th of a watt so 1/10 billionth of a
7 milliwatt. That is what I mean about tiny power.
8 This is, like, nothing. It's --

9 You know, I understand the concern of
10 people because they think that the cell phone
11 technology is something new that's just come along
12 but it's really the least of your worries. You are
13 getting much more radiation on a 24/7 basis from the
14 satellites that are up there and Direct TV and
15 Sirius XM. They are higher power levels than what
16 we are talking about here and the florescent lights,
17 the electronic ballasts are 10 or 20 times as much
18 radiation and look how close we are to them.

19 MR. CORELLA: The radiation coming
20 from the tower plus the radiation coming from Public
21 Service, does that amplify anything?

22 DR. EISENSTEIN: The Public Service
23 lines are 60 cycles per second, 60 hertz. These
24 bands are 2,000 -- 100 million cycles per second.
25 There's such a wide range over here that they are

1 not even comparable. They are not in the same --

2 MR. CORELLA: They wouldn't combine to
3 become a problem?

4 DR. EISENSTEIN: No. The power lines,
5 for the length that we are talking about, they do
6 not radiate. There are magnetic effects if you are
7 close to the power line, meaning within -- maybe
8 standing under the towers. There's been no evidence
9 that even -- no one lives under the tower 24/7.
10 There's no evidence that, even if you did, that
11 would cause any harm. These signals can't combine.
12 They are totally different from a physics point of
13 view. They are totally different signals.

14 MR. CORELLA: I appreciate that,
15 Doctor.

16 CHAIRMAN VIVONA: I think that helped
17 out quite a bit.

18 DR. EISENSTEIN: Thank you.

19 CHAIRMAN VIVONA: Thank you.

20 Anybody else have anything for this
21 witness?

22 (No response)

23 CHAIRMAN VIVONA: Anyone from the
24 public have any questions about Mr. Menio's
25 testimony?

1 (No response)

2 CHAIRMAN VIVONA: Okay. Thank you.

3 MS. KNARICH: Can I have a few minutes
4 with my client?

5 CHAIRMAN VIVONA: Certainly.

6 (Recess taken)

7 MR. SHAW: Perhaps you can make a
8 statement?

9 MS. KNARICH: In light of the certain
10 recommendations made from your wireless consultant
11 with regard to the height and lowering of the
12 wireless tower, we would like to request to carry so
13 we can look into that issue and provide definitive
14 feedback to the Board with respect to the issue so
15 I'll ask that we be carried to whatever the next
16 meeting is.

17 MR. SHAW: The next regular meeting is
18 May 18th. We would not be able to give you a full
19 evening. There are other applications on. If the
20 Board was amenable to it, we could reschedule this
21 to be conducted at our June 7th work meeting.

22 MS. KNARICH: I would request June 7th
23 to give the carriers a little time to look into it.
24 I don't want to commit a week from now because I'm
25 not sure how quickly we can get a turnaround.

1 MR. SHAW: Okay. I'm not hearing any
2 objections from the Board.

3 MR. HURRING: I'm okay for now.

4 MR. MICHAELS: If I can't make it,
5 I'll send a substitute.

6 DR. EISENSTEIN: I'm okay.

7 MR. SHAW: Members of the public, the
8 public hearing is going to be carried to the Board's
9 meeting on June 7th. There will be no further
10 notice. If you are here, you are hearing the date
11 it's rescheduled to.

12 MR. HURRING: We are looking into
13 lowering it?

14 MS. KNARICH: Yes. It's a request by
15 your wireless consultant.

16 MR. HURRING: What about the gas line?

17 MS. KNARICH: I could give you more
18 specifics but it's DEP but, again, the line is for
19 the generator so, you know, there's things we can
20 look into at this point. It's not for the tower or
21 the antennas or the equipment. It's specifically
22 for the generator proposed.

23 MR. CORELLA: Can we ask this young
24 lady to look into the point of if this tower does go
25 through, can it be camouflaged to look like a pine

1 tree or whatever? Can you look into that matter?

2 MS. KNARICH: I think that would be
3 something to work with the Board on with respect to
4 the option for that.

5 MR. CORELLA: At least it wouldn't be
6 a missile sticking straight up in the air.

7 MR. WILLIAMS: The physical appearance
8 is very important to us too. We can mandate that
9 certain things have to be to make it look better.

10 MR. SHAW: In other words, you could
11 at least be in a position to discuss some
12 camouflaging for the pole at the meeting in June?

13 MS. KNARICH: Yes. Absolutely.

14 MR. SHAW: We are postponing it
15 because there was a suggestion made by Dr.
16 Eisenstein to potentially have the tower lowered and
17 since Verizon representatives are not here, they
18 need to coordinate so they have requested to carry
19 the matter to the meeting on June 7th. You will
20 have an opportunity to talk at great length but that
21 doesn't happen until they finish their case, which
22 is probably one real witness left, their planner.

23 MS. KNARICH: I might have to recall
24 some witnesses to put certain items on the record.

25 MR. SHAW: We should be able to get to

1 the public comment the next meeting.

2 MR. HYLAND: Do we have those handouts
3 for the public on how these meetings work?

4 MS. SMITH: Yes. They are not out
5 tonight.

6 MR. HYLAND: There are guides
7 available --

8 MR. SHAW: Online, if you go to the
9 township website and go to the Board of Adjustment,
10 you will find a guide for public participation in
11 these hearings and it goes into detail --

12 MR. HYLAND: Helps you understand what
13 the process is.

14 MR. SHAW: It's also online.

15 MS. KNARICH: Thank you. I'll see you
16 on June 7th.

17 CHAIRMAN VIVONA: Thank you.

18 (The hearing concluded at 10:25 p.m.)

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C E R T I F I C A T E

I, ALISON GULINO, a Certified Court Reporter, Registered Professional Reporter and Notary Public of the State of New Jersey, authorized to administer oaths pursuant to R.S. 41:2-1, do hereby state that the foregoing is a true and accurate verbatim transcript of my stenographic notes of the within proceedings, to the best of my ability.

Alison Gulino, CCR, RPR

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