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PLANNING BOARD

PUBLIC HEARING  
5 CRAIG ROAD - CELL TOWER APPLICATION

MARCH 18, 2014  
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---- Reporter: Julie Thomson Riley, RDR, CRR ----

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P R O C E E D I N G S

8:07 p.m.

CHAIRMAN CLYMER: So we're a little late on our 8:00 hearing, but we're ready to go on with that, and I know we've got some new materials, and I think that we want to -- I guess we'll start with Mr. Sousa and then, Dave, we'll give you -- and others on your side --

MR. SOUSA: Of course.

CHAIRMAN CLYMER: -- and then we'll give Dave a chance to address that.

So we'll start with you.

MR. SOUSA: Thank you, Mr. Chairman.

Good evening. For the record, Ricardo Sousa, from Prince Lobel Tye, here on behalf of the applicant, SBA Communications and the co-applicant AT&T Wireless.

Mr. Chairman, also with me tonight is Amjad Md, who is the RF engineer for AT&T Wireless. In fact, he was just in the room. He may have just stepped out, but he provided testimony at the last hearing.

In addition is Steve McGovern from

1 Airosmith. He provided some testimony about  
2 alternative site analysis and our efforts in that  
3 arena.

4 And also with me tonight for the first  
5 time is Mr. Dan Goulet from C Squared Systems.  
6 Where we left off at the last hearing I think there  
7 was an open question regarding the nature of the gap  
8 in coverage that AT&T Wireless has in its network.  
9 It's fairly technical, and so the direction was that  
10 AT&T Wireless RF engineers provide some raw data to  
11 Mr. Maxson, the Town's consultant from Isotrope;  
12 and, in fact, there was some release of some data,  
13 raw data, together with some dialogue between the RF  
14 engineers for AT&T Wireless and Isotrope.

15 Isotrope then submitted a report on or  
16 about January 23rd to both the Board and to the  
17 applicants, and it was our feeling that there was  
18 still a disconnect with respect to the dialogue  
19 between AT&T and Isotrope. And so we suggested that  
20 we have the company that actually did the drive  
21 testing and that understands the nature of these  
22 networks best, C Squared Systems. We asked them to  
23 prepare a report relative to all the information  
24 that you've received yourself and an analysis of

1 Isotrope's report as well, so that they can  
2 essentially go through step by step and best  
3 describe the nature of this gap in coverage because  
4 I think that's an important element of this  
5 application as to whether or not it's a significant  
6 gap.

7           And so C Squared's prepared its report,  
8 submitted it to the Planning Board on or about  
9 March 7th. Mr. Maxson from Isotrope received a  
10 copy, and he submitted a response to that on or  
11 about March 14th of 2014.

12           And so those are the dates, and I think it  
13 would be best if Mr. Goulet could come up and  
14 essentially go through his report briefly. You have  
15 copies of it, I believe, that you can refer to, but  
16 we also have the plots that were prepared by  
17 C Squared Systems up on the screen, and I'm going to  
18 go tend to the laptop while Mr. Goulet presents his  
19 testimony.

20           CHAIRMAN CLYMER: Okay. And just as  
21 Mr. Goulet presents, I think two of the things that  
22 I wasn't really clear on in his memo was -- and  
23 maybe the first one's not really an important point,  
24 but I'd like to understand why the sectors were

1 offline that created all this issue.

2 And the second one is that I want to  
3 better understand -- there was some language in  
4 there about explaining why certain bands were  
5 irrelevant for consideration, and I'd like to  
6 understand that more because I didn't get that from  
7 reading the memo.

8 So if I could just point out those two  
9 things that I'd like to hear about, that would be  
10 great --

11 MR. SOUSA: Sure. He may be --

12 CHAIRMAN CLYMER: -- and then we'll ask  
13 some questions after that.

14 MR. SOUSA: Of course, Mr. Chairman.  
15 Maybe he can address those early on.

16 CHAIRMAN CLYMER: Okay.

17 MR. SOUSA: So, Dan, if you could come up  
18 and first, just state your name for the record and  
19 then explain to the Board your experience in this  
20 area and your qualifications.

21 MR. GOULET: Good evening. My name is Dan  
22 Goulet. I'm with C Squared Systems, out of -- our  
23 main office is Manchester, New Hampshire.

24 I've been in this business for 30 years,

1 but the last 27, I've -- I was the RF radio frequency  
2 design manager for Nynex Mobile. That's dating  
3 myself who then became Verizon Wireless. After  
4 Nynex Mobile, after the merger, which was really an  
5 acquisition, a bunch of us had to take early  
6 retirement otherwise lose many, many years of  
7 service; and I was acquired by Sprint PCS, and I was  
8 the RF manager for their build-out of their PCS  
9 network back in 1996.

10 After Sprint, I was -- Sprint decided to  
11 close down all their field offices after the network  
12 was built and run it from Kansas City. So they  
13 hired contractors locally; and at that point, I  
14 worked for TeleCorp, who was bought by AT&T. Long  
15 story short, after three carriers, a bunch of us got  
16 together, and we started an engineering consulting  
17 business, which was C Squared Systems. That was  
18 back in 2000.

19 We are still employed by carriers, public  
20 utilities, to do network design, the macro network.  
21 We do a lot of outdoor DAS. We do a lot of  
22 in-building DAS design because everybody wants  
23 coverage everywhere.

24 I've been accepted as an expert witness in

1 probably over 100 communities. I've been accepted  
2 as an expert witness in federal court, district  
3 courts. So that's my background.

4 What we did here -- I'm going to go  
5 through the report, answer your questions --

6 CHAIRMAN CLYMER: Okay.

7 MR. GOULET: -- as to what AT&T is trying  
8 to do here and what our involvement was.

9 I just want to walk you through the  
10 report. The first thing I want to talk about is  
11 what AT&T is trying to do, why we have different  
12 frequency bands. AT&T is right now deploying what  
13 is called their 4G network, fourth generation LTE,  
14 which is Long Term Evolution. So there was the  
15 original network. Then there was 2G. Then after 2G  
16 came 3G, which is currently out there and operates  
17 in both 800 and 1900, which is the PCS frequencies.

18 And I want to just touch on the reason for  
19 that. AT&T launched their original network using  
20 800 megahertz band. They ran out of spectrum. The  
21 usage was so great and demand so high right now  
22 currently in the United States -- well, I don't want  
23 to say currently. As of 2011, 38 percent of the  
24 population of this country is totally wireless.

1 They don't have landline phones. They use wireless.  
2 Now people not only want to be wireless for voice,  
3 they want to be wireless for data and broadband, and  
4 video streaming.

5 So AT&T deployed the 800. What they had  
6 to do to accommodate the demand and meet the  
7 capacity requirements for the network, they had to  
8 purchase PCS frequencies, the 1900 band; and what  
9 they did was an overlay. They overlaid the 1900,  
10 which is a smaller footprint because of the  
11 band -- the frequency band and the length, the  
12 wavelength.

13 So what happens is when you're a user, you  
14 go out there, the first thing they try to put you on  
15 is the PCS. If the signal is such that you can't  
16 have a good connection on PCS, it drops you down to  
17 the 800 underlay platform.

18 Now, when they went to launch their 4G or  
19 as they were launching their 4G, they don't want to  
20 design the network for today. They need to design  
21 the network so that they can provide reliable  
22 service -- and I don't mean just voice, I  
23 mean -- I'm talking voice and data services. They  
24 need to be able to accommodate demand. They

1 don't -- the 4G that's out there today has very few  
2 users on it.

3           So if you're the only user, you're going  
4 to have fast through-put speeds. You're going to be  
5 able to download, upload. You want to be able to  
6 get on the web, get directions when you're out  
7 driving, whatever you're doing. But once everybody  
8 starts using that 4G network, what do they do?  
9 They've got to have the capacity to handle all of  
10 the customers. So, therefore, they went out, and  
11 they purchased PCS frequencies, which is the 1900,  
12 which has about half the footprint of an 800 system,  
13 and then they purchased what they call the AWS band  
14 which is even higher. It's 2100 megahertz. And on  
15 top of that, they purchased the WCS band which is  
16 2.3 gigahertz which has a very small footprint. But  
17 they purchased the spectrum from the government, so  
18 that they can do a complete design.

19           Now, to answer your question, when we  
20 presented -- AT&T originally presented everything.  
21 As I stated in my report for the LTE, they purchased  
22 700 megahertz, which is -- coverage is comparable or  
23 I shouldn't say coverage, the propagation through  
24 the leaves and everything else is comparable to 800.

1 They purchased 700 licenses. They purchased 1900,  
2 2100, and 2300.

3 The difference between what's currently  
4 out there for 3G and the 700 is the pilot signal.  
5 Now, they know that once they launch the 700, which  
6 they already have, that bandwidth is going to get  
7 used up very fast and the reason they know that is  
8 from all the network information that they get daily  
9 from customers using the network; and they know from  
10 trending over the years where wireless is going and  
11 what the data usage is.

12 The data usage surpasses voice  
13 incrementally. So how are they going to handle the  
14 data usage? They said, okay, we're going to do a  
15 design. We're going to forget about the 700 layer  
16 because we know that's going to get used up right  
17 away.

18 We have to focus on the 1900. Now, the  
19 AWS and the WCS bands, they know for a fact those  
20 footprints are going to be much, much smaller than  
21 the PCS, but everything that they presented was  
22 based on the PCS because that's what they're doing  
23 their Long Term Evolution design on.

24 Does that make sense?

1 CHAIRMAN CLYMER: So you're saying that  
2 the other bands will be used up in the future, and  
3 that's why you're not looking at them? Is that a  
4 fair restatement or no?

5 MR. GOULET: The upper bands, higher than  
6 the PCS, will be deployed in the future. As they  
7 see that they're reaching a certain percentage of  
8 capacity on the PCS band, then they will start  
9 deploying. The antennas that they're putting out  
10 there now, most of them are called multiband or  
11 tri-band antennas; so they won't have to go back out  
12 and install more antennas. They'll have to add more  
13 equipment at the base station, which it's only  
14 connected via fiber to the antennas; but the  
15 antennas are already in place to accommodate the new  
16 frequencies as they need them. But those new  
17 frequencies, just as the PCS worked over the 800  
18 layer, the WCS and the AWS will work on top of the  
19 PCS layer.

20 And when I say a small footprint, I mean  
21 extremely small. You have in the center of town  
22 here, if you had a site on the top of this building,  
23 that footprint in the AWS and WCS blocks -- bands  
24 would probably go a block or two. Because if you

1 consider all the users in -- I don't know -- a tenth  
2 of a mile radius from here, there's going to be a  
3 lot of users. You have commercial; you have  
4 residential. So that's what they're doing.

5 Does that make sense?

6 CHAIRMAN CLYMER: I guess my question  
7 really has to do with, you know, what is being  
8 reflected when you're looking at signal strength,  
9 when you're looking at all the maps. I'm  
10 under -- well, I'm under the impression from reading  
11 everything, that AT&T is not looking at all of the  
12 bands in determining --

13 MR. GOULET: No. No. These plots that  
14 you're being presented and we're going to talk about  
15 tonight are looking at the 1900 band.

16 CHAIRMAN CLYMER: Okay.

17 MR. GOULET: Because that's the band that  
18 has to be addressed because that's the next step  
19 that's going to handle the capacity once people know  
20 that the 4G is out there, and they start using it.

21 CHAIRMAN CLYMER: So then does that mean  
22 that this is forward looking at what people are  
23 going to need in the future, not necessarily where  
24 we are today?

1 MR. GOULET: It is where we are today in  
2 the sense that that is the band that AT&T is doing  
3 their network design on. Period. The end.

4 They're not designing for any other band  
5 other than 1900. If there's a gap today at 1900,  
6 there's going to be a gap -- on the 3G, there's  
7 going to be a gap on the 4G. That's the problem.

8 And you can't consider what's already out  
9 there handling the voice and data. That's already  
10 in use. It's already used up.

11 And we're not talking -- when I go through  
12 these maps, I'd like to explain real quick before we  
13 even get into them what all these colors mean. The  
14 reason --

15 CHAIRMAN CLYMER: Can I just ask you one  
16 more question.

17 MR. GOULET: Okay.

18 CHAIRMAN CLYMER: When you say "used up,"  
19 what does that mean?

20 MR. GOULET: They're at capacity. They're  
21 at capacity. They can't handle the through-put data  
22 at the bandwidth that is being demanded by the  
23 users.

24 CHAIRMAN CLYMER: Okay.

1 MR. GOULET: So someone goes on their  
2 phone and people are listening to Pandora and  
3 they're downstreaming movies, and they're  
4 downstreaming e-mails -- and I'm not talking just  
5 mobile phones; I'm talking about wireless devices  
6 that I could have attached to my laptop, sitting in  
7 the backseat while I'm driving, and I'm uploading  
8 and downloading data. I don't need to be in this  
9 office hooked up to a landline network cable. I  
10 want to be wireless. I want to be able to grab my  
11 laptop and go where I want to go and use it and just  
12 be -- and be wireless.

13 And all the people that do not have  
14 Comcast or cable TV or whatever medium they're  
15 using, they need wireless access to the network.

16 So that's what AT&T's trying to do. So  
17 we're talking -- right now it's not even voice. 4G  
18 today does not handle voice traffic. It's  
19 called -- that will happen. It's called VoLTE,  
20 V-O-L-T-E. So it's Voice over LTE. That's coming  
21 very soon. It's being tested now, but today, that's  
22 not available. The 4G, the only thing you can do on  
23 4G is data and broadband.

24 But that is their design plan is the 1900

1 is the base. The higher bands are going to be  
2 smaller footprints. They're going to live with it.  
3 They'll use them for additional capacity offload for  
4 the 1900.

5 Okay. Now, I just want to talk  
6 real -- I'll try to keep it short.

7 MR. CHIN: May I ask a question?

8 MR. GOULET: Yes.

9 MR. CHIN: I thought I heard you say that  
10 2100 and 2300 coverage is only one block.

11 MR. GOULET: What I'm saying is the  
12 coverage requirements, the -- if you were using the  
13 AWS band, and I can show you when we get to the PCS  
14 plots, those signals don't go very far.

15 I mean --

16 MR. CHIN: They go only one block?

17 MR. GOULET: Well, it depends how big a  
18 block is. If we're talking a block in New York  
19 City, you wouldn't even get a block.

20 MR. CHIN: Well, I'm saying unless they  
21 improve the technology, that doesn't sound practical  
22 to have a cell tower every block away.

23 MR. GOULET: Well, no, you're doing other  
24 things besides having cell towers. You're using the

1 1900, which is going to have a bigger footprint and  
2 what you're using, for example, if you have -- I  
3 don't know -- a mall in one location, that -- you  
4 don't need a big, huge footprint. You don't want a  
5 big, huge footprint. You want to cover that mall or  
6 if you have a Liberty Mutual or a hospital, so you  
7 can utilize -- they just need to put a few antennas  
8 up on the roof. They don't need a tower.

9           When I'm talking about all these gaps, I'm  
10 not saying every gap has to be addressed with a  
11 tower, but it's going to need a cell site.

12           And there's new technologies coming out.  
13 They're coming out all the time that they're  
14 designed to handle high density areas with small  
15 cells they call them.

16           So, I don't know. Did I answer your  
17 question?

18           MR. CHIN: I think you did.

19           MR. GOULET: Yeah, if I was in my town,  
20 which is a rural community, orchards and farms, and  
21 everybody's spread out, the AWS channel might  
22 carry -- other than the terrain, it could cover a  
23 much larger area than a couple of blocks because  
24 there's not as many users. Once you get users on

1 the network, the service effectively shrinks.

2 If you're the only one talking in this  
3 room, you can talk pretty low, and everybody's going  
4 to hear you and understand you. If two or three  
5 people start talking and then the radiators go off,  
6 and then you have outdoor traffic, now you have to  
7 talk louder to be understood. Well, you can only  
8 talk so loud. That's the noise flow. That's what's  
9 happening with this. And now with this new 4G and  
10 broadband and data, what happens is what you used  
11 to -- the government -- FCC says if you've got a 4G  
12 network, these are the minimum data rates you have  
13 to meet. You've got speeds that you have to meet;  
14 otherwise, you're not 4G. You're only 3G or 2G.

15 So once you get a lot of people on the  
16 network, what happens is if everybody's using that  
17 spectrum; so those data speeds slow down, and you  
18 can potentially not be meeting your 4G requirement.

19 Is that any clearer?

20 CHAIRMAN CLYMER: Why don't you get  
21 through your presentation, so we can.

22 MR. GOULET: All right. So these colors,  
23 before I get into the specifics, so what these  
24 represent is thresholds, operating thresholds;

1 so --

2 MR. MAGLOTHIN: I'm sorry to interrupt,  
3 but I have a question. I thought we were going to  
4 have a third-party independent drive test.

5 CHAIRMAN CLYMER: Well, we do -- we have a  
6 third-party here -- well, we have a consultant here  
7 who's going to speak after this gentleman, and then  
8 we'll open it up to the public.

9 MR. MAGLOTHIN: But a different drive  
10 test.

11 CHAIRMAN CLYMER: Well, I think if you  
12 kind of -- I mean, right now we're talking about the  
13 drive test that was done where there was, you know,  
14 different views on that, and we're trying to resolve  
15 that first.

16 MR. MAGLOTHIN: Okay.

17 MR. GOULET: Okay. So I'm going to get  
18 into the drive test. That's what's up here.

19 I first -- is there any way you can blow  
20 that up a little bit? Can you hit the magnifier and  
21 just go up to like 125 percent or 100?

22 There you go. Okay. We can do this a  
23 little less than that. It's just so we can see --

24 MR. BARTL: A little less?

1 MR. GOULET: Yeah. Thank you. That's  
2 good for now.

3 MR. BARTL: Is that a good location or?

4 MR. SOUSA: Yeah, that's good.

5 MR. GOULET: Yeah, that's a good location.

6 MR. BARTL: Okay.

7 MR. GOULET: So the colors, the green on  
8 this represents what AT&T is looking for, very  
9 reliable coverage. That's solid, reliable coverage.  
10 What they do is these are relative to the pilot  
11 signals. It has nothing to do with anything that  
12 you're -- any bars you're going to measure on your  
13 phone or any received signal strength that you may  
14 see on your phone when you're on a call. This is  
15 relative to pilot.

16 When you go to access the network, you  
17 have to access a cell site and sector and a pilot,  
18 and you want to have a strong server in the area  
19 that you are. You don't want to have a bunch of  
20 multiple weak signals getting in at the same place.  
21 That gets to what we talked about, the noise flow.

22 So you don't want to have -- in this plot  
23 here for 4G, we're only considering -- we're only  
24 considering the green and the blue. What I have up

1 here, the reason I have this slide up -- I want to  
2 show you -- what's this?

3 MR. SOUSA: It's a pointer.

4 MR. GOULET: Oh. Is it doing anything?  
5 I'll use this.

6 All right. Now, the area of contention  
7 with the drive test from Isotrope was right here  
8 (indicating).

9 This is -- I'm looking at Exhibit 1 in  
10 your package. Now, you see how the predictive is  
11 the blotchy underlayer. These lines here are the  
12 actual roads that were drive tested; and I want to  
13 mention that there was -- in these plots that you're  
14 looking at now, there is no adjustments made with  
15 the drive test data. There's no 60B. There's no  
16 antenna adjustment for the mobile antenna on the  
17 roof, et cetera.

18 So what happened was Isotrope saw this and  
19 said, well, wait a minute. Why do you have red,  
20 which is a very weak signal up here (indicating)  
21 when you've got a site up here with a sector pointed  
22 right down Great Road? And so then we did some  
23 digging because his statement in his report was that  
24 the drive test data was flawed.

1 Well, the drive test data is absolutely  
2 not flawed because the drive test, what you're  
3 doing -- we have a \$35,000 scanner and some other  
4 equipment that what it's doing it's taking  
5 measurements off the air of everything that's there.  
6 The existing conditions of the network. It's just  
7 like if I walked out this door, and I went outside,  
8 and I measured air quality, the measurement's not  
9 flawed. I'm measuring what's there. Period. The  
10 end.

11 The reason he came to the conclusion that  
12 it was flawed was because it didn't make sense with  
13 the sectors and where the cell sites were, and that  
14 part was valid because what we found out after we  
15 did some digging was that there's a site -- I want  
16 to get my plot out just so we're looking at the same  
17 thing.

18 There's a site -- can I move that down  
19 with this? Should I be able to slide that down, the  
20 whole plot?

21 MR. BARTL: Oh, yeah, down this way.

22 MR. GOULET: Oh, here you go. See that  
23 site right there (indicating). So that site right  
24 there (indicating), he's saying why is this red?

1 That should be covered, that road, that sector.

2 That's called the beta sector.

3 Well, what we found out after some  
4 research, and I looked at the data myself, and we  
5 found out that that sector at 1900 is not turned on.  
6 The 850 is turned on, but the 1900 PCS, it's in  
7 process, but it wasn't turned on the day that we did  
8 the drive test. It's being deployed. So they had  
9 the alpha -- the other two sectors were turned on,  
10 so the one pointed north, and the one pointed  
11 southwest were active. So then --

12 Can you go to the next slide.

13 CHAIRMAN CLYMER: As you're doing this, I  
14 mean, the original plots that we got were produced  
15 by who?

16 MR. GOULET: AT&T, the very original.

17 CHAIRMAN CLYMER: So AT&T was the group  
18 that you went to to determine that these were shut  
19 off; right?

20 MR. GOULET: Yes. I -- we -- C Squared  
21 performed the drive test. AT&T contracted us to do  
22 the drive test. We do these all the time.

23 CHAIRMAN CLYMER: Uh-huh.

24 MR. GOULET: We gave them the data.

1 Period. We just gave them a file with the raw data.  
2 They created plots, and I think what happened was  
3 two things: The AT&T engineer at the time didn't  
4 realize that that sector wasn't turned on yet,  
5 because according to his information, it had been  
6 deployed, but it wasn't.

7 So when we looked at the data, and we  
8 actually plotted the pilot assignments along the  
9 drive test data, we found that that sector was off  
10 the air and that another site over here (indicating),  
11 the sectors that were originally presented were the  
12 4G sectors that's planned, but that's not the sectors,  
13 the azimuths, the direction those sectors were  
14 pointing the day of the drive test. It's going to  
15 be optimized when 4G comes out. It's going to have  
16 different azimuths, and the engineer inadvertently  
17 gave Isotrope those azimuths.

18 So what we did was we put the cell sites  
19 in the configuration that they actually were the day  
20 of the drive test because when we do these tests, we  
21 want to make sure that the predictive model that  
22 we're using is accurate.

23 So now as you can see, if you look down  
24 this road (indicating), and you look along

1 especially right here (indicating), you go along  
2 Route 2. You see how it's green and blue, and then  
3 the drive test, which is a little darker yellow than  
4 the underlay, the predicted goes right to yellow.  
5 Where there's red, it goes to red, and  
6 that's -- that's how we know that our predictive  
7 model is accurate. We're not throwing darts at a  
8 dart board. We do this model tuning all the time  
9 because we have so much drive test data collected  
10 with this sophisticated equipment; and we're not  
11 just monitoring signal strength. We're monitoring  
12 signal to noise. We're monitoring adjacent pilots.

13           Anyway, so we came up with -- there's the  
14 coverage for the existing. That's UMTS 1900 megahertz  
15 coverage.

16           So now if we go to the next slide. What  
17 I've done with the next slide is the -- oh, I'm  
18 sorry. Can you go back one.

19           MR. SOUSA: Do you need two?

20           MR. GOULET: Yeah, I need you to go back  
21 to two for a minute.

22           In this slide, you see four threshold  
23 levels. You've got green, blue, yellow, red.

24           Let me see. Now, the green represents

1 in-building. The blue represents in-vehicle  
2 coverage. What that does is if -- the signal outside,  
3 we know what the threshold is. We assign a value  
4 for the penetration loss to get into this building,  
5 and there's penetration loss to get into a vehicle.  
6 So I've got my phone on the seat. I've got my laptop  
7 on the back seat. There's a loss getting through  
8 that metal and everything else. The only two levels  
9 that we're concerned about in 4G world is the green  
10 and the blue.

11 Those are the thresholds that we need to  
12 operate in 4G. So now if you can go to the next  
13 slide here.

14 So I've simplified this plot. It should  
15 be Exhibit 3 in that same folder.

16 Okay. So this is the predictive coverage.  
17 Now that we know we have an accurate model, we  
18 generated coverage plots showing what the PCS  
19 coverage would be once that beta sector at Post  
20 Office Square gets turned on and with the  
21 actual -- the sectors for Annursnac Hill. So you  
22 look at Route 2, Route 2A, and you see huge gaps.  
23 You look south of Route 2 where the residences are,  
24 and there's huge gaps.

1           Now, the next slide -- and we know this  
2 model is accurate, and there's specific scientific  
3 ways of determining the accuracy of the model, and  
4 it's called standard deviation. What's the  
5 difference between the predicted and the measured  
6 coverage?

7           Now, this -- this slide is Exhibit 4. It  
8 shows you what the PCS coverage would be with the  
9 proposed site at 95 feet.

10           And you say, well, you know, you still  
11 have some gaps. Well, we do. We know that. But  
12 that's the best we can get right now. But what  
13 we're doing, the key thing here is right where that  
14 site is covering in green on Route 2, there are some  
15 just right over the site, there's traffic counts,  
16 annual average daily traffic counts of in excess of  
17 38,000, which I think I included in the report.

18           On Comm. Ave., just south of Route 2,  
19 right when you get off the exit from Route 2 to  
20 Comm. Ave., there's 8,900.

21           And then you go on Great Road between  
22 Route 2 and just south of Pope Road, you've got  
23 26,000 average annual daily traffic counts. Well,  
24 all of those potential users there, what happens is

1 that's impacting the residential users in their  
2 homes. Because you've got so many users on the  
3 network on Route 2 and Comm. Ave. and Great Road,  
4 their service is being sacrificed.

5 Now, the other important thing based on  
6 the same signal level thresholds -- can you go to  
7 Exhibit 5.

8 So this exhibit, all of these colors, this  
9 tells you which sector and which site is covering  
10 what area. So these browns here (indicating), the  
11 dark is off the alpha sector of Annursnac Hill. All  
12 of this gold that you see here right now today,  
13 that's all one single, the beta sector of Annursnac  
14 Hill; and that is not a good situation at all  
15 because now you've got all those traffic counts,  
16 plus all the residents within that footprint are all  
17 on just the beta sector of Annursnac Hill, which  
18 means they're going to have terrible data rates, and  
19 they're not going to have reliable service. And as  
20 usage goes up, it's only going to get worse.

21 So, now, Rick, can you go to Exhibit 6.

22 MR. CHIN: You mentioned 38,000. Does  
23 that include the traffic count?

24 MR. GOULET: That 38,000 doesn't include

1 any residents. That's just traffic counts on  
2 Route 2, average annual daily traffic counts, and  
3 that number, I'm sure, is much higher because that  
4 data's from 2009.

5 MR. CHIN: Thank you.

6 MR. GOULET: So if you look at Exhibit 6,  
7 what this is showing you is what the proposed site  
8 would do and what impact it has on the existing beta  
9 sector of Annursnac Hill.

10 Now, you notice there's still  
11 this -- Annursnac Hill is still getting in a little  
12 bit down there, but the point is, right where that  
13 38,000 traffic counts are, we now have two sectors  
14 of the proposed site covering that.

15 So now we're not just moving the problem  
16 from Annursnac Hill to the proposed site, we've got  
17 two sectors plus Annursnac Hill covering that area;  
18 and then you've got improved coverage to the  
19 residents to the south; and the third thing is you  
20 have impacted -- by building that site, you've  
21 offloaded that beta sector so that people north  
22 between Annursnac Hill and the proposed site, they  
23 now have a better chance of having reliable service  
24 because of that off-load. AT&T would be meeting

1 most of the capacity demand for now until they have  
2 to launch their higher frequency bands.

3 I want to talk --

4 MR. SOUSA: Dan, can you talk a little bit  
5 about the dominant server element of this.

6 MR. GOULET: Oh, yeah. This whole  
7 business about the dominant server, kind of the  
8 analogy that I was using earlier about one person  
9 talking in the room, two persons talking in the  
10 room, you know, if you get multiple people talking  
11 in the room, if I don't have this microphone, and  
12 everybody's talking, and I'm trying to talk to you,  
13 and you can't understand what I'm saying, I've got  
14 to get closer to you. That's the only way you're  
15 going to hear me.

16 What happens is if you get all of those  
17 different colors, every single one of those, that  
18 has a different pilot assignment. If you get  
19 multiple pilots on the infringed areas, marginal  
20 areas, and they're all getting to that point where  
21 there's a user, and they're approximately the same  
22 level, then the noise floor has gone up. Service  
23 has degraded. You have the potential for  
24 disconnects. You certainly have the potential for

1 extremely slow data that's going to be much less  
2 than 4G.

3           So you need to have a dominant server.  
4 You don't want to be serving somebody down by, say,  
5 Laws Brook Road, you don't want to be serving them  
6 from Post Office Square, which you can see there are  
7 some signals from Post Office Square getting in  
8 there, even with the new site, but they're very few.  
9 I'm sorry. They were getting in there. With the  
10 new site, they don't get in there. I'm looking at  
11 it now; that's gone.

12           So you need -- a dominant server is  
13 critical to capacity, and it's critical in meeting  
14 through-put rates, data speeds.

15           I want to talk a little bit about the  
16 drive testing. In Isotrope's report, they talk  
17 about, well, they were concerned that we didn't  
18 address their independent drive.

19           Well, their independent drive was not done  
20 using any kind of sophisticated equipment. It was  
21 done using a phone, and it was done on two miles of  
22 road, basically drove the loop down School Street  
23 from Route 2, down School Street across Laws Brook,  
24 and up --

1 MR. SOUSA: Hosmer.

2 MR. GOULET: I'm sorry. What is it?

3 MR. SOUSA: Hosmer.

4 MR. GOULET: Hosmer. And then back on  
5 Route 2. So he did that loop and the first test he  
6 did was he listened to music on his phone, and he  
7 said it was fine. He never lost the song. Well, I  
8 know for a fact that platforms like Pandora that you  
9 downstream music from, they have a buffer. I can  
10 take my phone and dial up Pandora, and two seconds  
11 into that song, I can throw my phone into airplane  
12 mode -- and I know this because I've done it -- throw  
13 it into airplane mode. That song will play all the  
14 way to the end of that song because they buffer  
15 them. I can't -- during that period, I can't switch  
16 songs or get a new song because it's not going to  
17 connect me. It won't connect me because there is no  
18 service.

19 So his drive test using a phone and  
20 listening to music is totally invalid. That's not  
21 the way you measure network performance.

22 The second thing he did was -- can you put  
23 up the other exhibit.

24 CHAIRMAN CLYMER: Just to clarify, we're

1 going to let him finish, and we're going to talk  
2 to -- Dave Maxson's going to have a chance to  
3 comment, and then we're going to open it to the  
4 public. Okay?

5 MR. GOULET: Can you go to -- it should  
6 say --

7 MR. SOUSA: Is this it?

8 MR. GOULET: Yeah, if you can open that  
9 bottom one, UMTS sample, and now can you also open  
10 the map. There's another one in there. If you can  
11 get back to it.

12 MR. SOUSA: This one?

13 MR. BOURDON: While we're waiting for that,  
14 I had two questions. You said the 1900 service is  
15 not turned on at Post Office Square. When is that  
16 supposed to be turned on, and when are they planning  
17 on deploying the 4G LTE since there doesn't seem to  
18 be any concrete dates around that? They want to  
19 plan for the future, but we're going to deploy it  
20 sometime in the future; and that's like saying, the  
21 Treasury is going to start cutting or upping interest  
22 rates sometime in the future. It doesn't say when.  
23 It doesn't tell me any information. It says we're  
24 going to do it, and that's where I'm kind of

1 struggling with saying, you have the 1900 at Post  
2 Office Square, but it's there, and it's not turned  
3 on. So that's not doing any good; and I imagine  
4 Annursnac Hill probably has the same situation where  
5 it's there, but it's not turned on. Then you have  
6 this tower, but you don't know when you're going to  
7 use it. So it's kind of like you're not giving us  
8 the full information.

9 MR. GOULET: Yeah, can I respond to that?

10 MR. BOURDON: Sure.

11 MR. GOULET: The 4G is deployed at all the  
12 surrounding sites including Annursnac Hill. The  
13 beta sector for the 1900 at Post Office Square was  
14 supposed to be deployed on or around 2/14. They're  
15 running late, but the rest of the sectors have 4G.

16 MR. BOURDON: And they're turned on now?

17 MR. GOULET: They're turned on. The beta  
18 sector will be turned on. It could be turned on  
19 today. I don't know. But they're just behind on  
20 implementing it and integrating it into the network,  
21 but it is actively being pursued. It was supposed  
22 to be on there -- 2/14 was the information I got.

23 So what I'm showing here is see that  
24 little square in the middle, the little box. That

1 represents 500 feet of Route 2. So now, I grabbed  
2 that -- I selected those data points and, if you go  
3 to the Excel spreadsheet slide.

4 What you're looking at is part of the  
5 information that we get from those data points. I  
6 had to lop off the rest of the information because  
7 it would have been horizontally three sheets wide.

8 Now, that's the industry standard. That's  
9 the information that people use. You have the lat.  
10 and long.; so you know exactly where the sample was  
11 collected. You have signal to noise ratio. And  
12 then what follows is you have the signal strength of  
13 the pilot, the best pilot. And then the subsequent  
14 columns and the shaded colors, those are the next  
15 best pilot and the next best pilot after that and  
16 the next best pilot after that; and it just goes on  
17 and on.

18 So here we had measurements. We had  
19 readings within 5 dB, up to six pilots, on Route 2  
20 now -- and I'm only pointing this out because this  
21 is what the industry standard is. Networks are  
22 designed based upon this type of drive test  
23 information, combined with the information that AT&T  
24 gets daily, every hour off of their switch, their

1 main switch that reports all of the activity on the  
2 network; but that's -- I only wanted to bring that  
3 out because what we got from Isotrope's report, if  
4 you go to the other slide.

5 MR. SOUSA: Which one is that?

6 MR. GOULET: I think it's under  
7 miscellaneous.

8 Okay. That one. So here, after the last  
9 hearing, it's my understanding, he drove that loop.  
10 And he -- looking at his phone, according to his  
11 report, he measured these signal strengths on a  
12 call. Well, that information is useless.

13 Number one, it's measuring the channel  
14 power of the call that he was on. It's not  
15 measuring pilot power.

16 Number two, I've got ranges of 70s, 80s,  
17 90s, and whatever. I don't know whether it meets  
18 which threshold of AT&T it meets because he's kind  
19 of lumped them all in together.

20 The other thing is if you look at that,  
21 and I think he -- I don't want to swear to it, but I  
22 think he references the fact that his independent  
23 drive test data validates his model, which if you  
24 look at the plots that Isotrope provided, it doesn't

1 validate it at all. He's showing a drive test in  
2 green. It's shaded green where the model shows it's  
3 yellow, which is significantly different,  
4 substantially different than -- so I'm not sure  
5 what -- my point to this is you cannot do a drive  
6 test with a phone whether you're on a call or  
7 listening to music and say okay. I drove this.  
8 This is the coverage in that area, say, 10:00 at  
9 night, whatever time it was after the last hearing,  
10 and service is just fine. He didn't measure data  
11 through-put. He only measured received signal  
12 strength, which is minimal, and he measured that  
13 signal strength on the channel that he was actually  
14 already locked on to in making a call. He's not  
15 measuring pilot signal strength at all.

16 CHAIRMAN CLYMER: Can I just ask you a  
17 question. Do you have more to present or is that ...

18 MR. GOULET: For now, I think I've  
19 covered -- I did mention the fact that we did make  
20 no adjustments to our drive test.

21 My whole point of showing the plots that  
22 we presented in the drive test was to get your  
23 affirmation that he believed that the prediction  
24 model that we were using is accurate; and from that,

1 I generated the subsequent exhibits that show the  
2 best server plots. And that's really all I have  
3 now.

4 CHAIRMAN CLYMER: Okay. Have you looked  
5 at our bylaw and how it defines a significant gap?

6 MR. GOULET: Briefly. I didn't delve into  
7 it.

8 CHAIRMAN CLYMER: So it refers to the  
9 carrier's personal wireless service.

10 MR. GOULET: Uh-huh.

11 CHAIRMAN CLYMER: And I, you know, I see  
12 how that's been defined to include mobile services,  
13 unlicensed wireless services, and common carrier  
14 wireless exchange access services. I don't see  
15 where data services are included in that definition.  
16 So I just wanted to get your sense of --

17 MR. GOULET: Well, wireless service is  
18 data service. It's not just voice.

19 CHAIRMAN CLYMER: I just --

20 MR. GOULET: 4G service, specifically the  
21 criteria for 4G is through-put rates which isn't  
22 voice. It's data.

23 CHAIRMAN CLYMER: So where does that fall  
24 under commercial mobile services? Is that where

1 that falls under? I'm just trying to look at the  
2 definition, and, say, it seems to refer to commercial  
3 mobile services, unlicensed wireless services, and  
4 common carrier wireless exchange access services.  
5 So I'm just trying to place that in the --

6 MR. GOULET: Well, I would say, in  
7 fairness, that when your bylaw was written, mobile  
8 services was probably appropriate, but if I'm in  
9 here using a wireless laptop, am I mobile? I'm  
10 portable. I'm not -- the word "mobile" originally  
11 came out with cellular and mobile communications:  
12 Nynex Mobile, Cell One. That was mobile. They  
13 designed to provide services for people in vehicles  
14 on the highway, but it's no longer mobile.

15 So to answer your question right now, I  
16 would say that mobile would have to be changed to  
17 wireless.

18 MR. YACOUBY: I think it is a problem.  
19 The definitions have changed so rapidly. So I think  
20 the real issue, in my opinion, is significant. I  
21 agree with kind of what -- it's kind of what are  
22 the --

23 CHAIRMAN CLYMER: Maybe I can just say why  
24 don't we let Dave comment, and then we can get into

1 that just because I just wanted to make sure I -- I  
2 just wanted to raise that because it was in there,  
3 and so, Dave, if you --

4 MR. SOUSA: So, Mr. Chairman, if  
5 Mr. Goulet could because he's gone through his  
6 presentation, but I would like him to go back to the  
7 original question, which is what's the nature of  
8 this significant gap? He talked about threefold  
9 aspects of it. So I want him to just summarize that  
10 for the record.

11 CHAIRMAN CLYMER: That's fine.

12 MR. GOULET: So when we go back to the  
13 prior plots, the nature of the gap is the lack of a  
14 dominant server on Route 2. So there's a definite  
15 need for Route 2 coverage and to meet the capacity  
16 demand in the traffic, the heavy traffic that's on  
17 that road, plus fill in the surrounding residences.

18 The second thing is to off-load the beta  
19 sector of Annursnac Hill; and then the third thing  
20 would be by offloading that, then you're going to be  
21 improving the reliability and the service to the  
22 residents that are currently off of Great Road, and  
23 they're being -- their service is being deteriorated  
24 because of the capacity demand on Route 2 and 2A.

1           CHAIRMAN CLYMER: Okay. I mean, I'm sure  
2 we're going to have questions for you that will come  
3 up, but I think in the interest of -- I think we'd  
4 like to hear Dave now, and then we can certainly do  
5 that.

6           MR. SOUSA: Of course. Of course.

7           MR. MAXSON: I would like to use the  
8 images shortly.

9           Thank you. For the record, my name is  
10 David Maxson with Isotrope, and I'm a consultant for  
11 the board on this matter.

12           You may recall back in September that in  
13 an effort to be efficient and reduce administrative  
14 burden on the applicant, we discussed whether or not  
15 we would attempt to rely on the applicant's drive  
16 test information.

17           And if you recall, the role of drive test  
18 information is twofold. One is to provide you with  
19 a visual indication that you can visually compare  
20 with what your computer is computing on the map, and  
21 that gives you a visual reassurance. The other  
22 thing that you can do, as Mr. Goulet described, you  
23 can do statistical analysis. You take the drive  
24 test data points, and you compare them with

1 corresponding computer-estimated data points in the  
2 same places. And with a drive test with several  
3 thousand data points, you can get a good statistical  
4 basis for the accuracy of your computer model.

5 Now, you may also recall in September, I  
6 had observed that when I did my initial modeling of  
7 AT&T's existing coverage, I thought there was much  
8 more coverage from Annursnac Hill on Route 2 and  
9 School Street than the AT&T computer models were  
10 showing. And that was why we were concerned about  
11 going to drive test information, to see if we can  
12 figure out what the discrepancies were between the  
13 two models. Usually my model is not that far off  
14 from AT&T's.

15 So in the intervening time after  
16 September, we held in abeyance Isotrope conducting  
17 an independent drive test and kind of late in the  
18 game, we got some information from the applicant.  
19 We got the drive test map. We were reassured that  
20 the drive test map was without any adjustments, and  
21 then we talked about that at the hearing, and we  
22 then arranged to get additional information from the  
23 applicant with that raw drive test data information.

24 In that process, we found out that, in

1 fact, there were adjustments made to the drive test  
2 maps submitted by AT&T; so it is not an  
3 apples-to-apples comparison with the computer models,  
4 and that was the first piece of information that was  
5 incorrect in this process.

6 As I proceeded to peel back the layers of  
7 the onion, looking at the drive test data and trying  
8 to compare it to my computer model, I had this  
9 difficulty with these two sectors, one sector from  
10 Annursnac Hill and one sector from Post Office  
11 Square that just looked like they weren't being  
12 represented in the drive test data to the  
13 point -- and I'll just show you this as a visual,  
14 but this is a map where I've printed out the sector  
15 number of all of the sectors that were picked up  
16 during the C Squared drive test that was submitted  
17 to me; and that's when I figured out there was not a  
18 single representation of the Post Office Square beta  
19 sector, as it's called. It's the second one  
20 clock-wise, usually around 4:00 or so on the  
21 compass, so to speak.

22 So I had to dig in to find out that, in  
23 fact, if I was going to calibrate my computer model  
24 to the C Squared drive test data, I had to turn off

1 Post Office Square, and I had to do something to  
2 adjust Annursnac Hill. So what we got was this  
3 series of erroneous information. In fact, in the C  
4 Squared report, it was referred to as misinformation.

5 So the AT&T information that was submitted  
6 to us was wrong. And I apologize if I left the  
7 impression that C Squared Systems had done anything  
8 incorrectly with its drive test. I relied on the  
9 data. It's not the drive test data that was flawed.  
10 It was the drive test that was flawed because the  
11 drive test was presumably measuring an operating  
12 network, and it wasn't. It was measuring a network  
13 that had a couple of sectors pointed in directions  
14 that we weren't told about. It had a sector that  
15 was not turned on.

16 So let's put this to bed. Isotrope and  
17 C Squared Systems, both use voluminous drive test  
18 data to calibrate their computer models.

19 Now, what I'd like to show is if we can  
20 put up the -- oh, we can start with the first -- the  
21 first map that was shown before. Maybe I'll just  
22 quickly walk through those and try to keep it a  
23 little shorter, a little more, you know, to the  
24 point so that we're not belaboring things with you.

1 You've been paying attention for a long time now.

2 MR. SOUSA: Do you want to use Dan's  
3 maps or --

4 MS. GUICHARD: I'm not sure --

5 MR. GOULET: Do you want to use my maps?  
6 Is that what you're saying or your own?

7 MR. MAXSON: Well, I wanted to use the  
8 maps that were presented previously, so.

9 MR. GOULET: So my plots?

10 MR. MAXSON: Well, the plots were  
11 submitted to the record? Yes?

12 MS. GUICHARD: I'm not quite sure which  
13 ones.

14 MR. MAXSON: Thank you for that.

15 What I would like to point out here  
16 perhaps as the primary take-away on this is that  
17 when I first -- have I got a red dot on the screen  
18 there?

19 MR. SOUSA: Yeah, it's just on the bottom.

20 MR. MAXSON: There it is. Good. Thank  
21 you. Thank you.

22 -- is this area around the proposed  
23 facility. The original AT&T maps did not have this  
24 coverage here, and that's what I found to be curious.

1 So that's why I wanted drive test data and  
2 information about the cell sites, so that I could  
3 fine tune my model. And what we find here is that,  
4 in fact, our assessment of existing coverage in this  
5 area, if you were to go back and flip through our  
6 report, you find very similar kind of results. So  
7 that in this sense, C Squared Systems and Isotrope  
8 are in fairly good agreement, especially compared to  
9 the original AT&T data.

10 So that's reassuring.

11 Now, if we could go ahead to the  
12 next -- is there another page on this -- on this  
13 PDF? Is that the way that's working.

14 MR. SOUSA: No.

15 MR. MAXSON: Or was it a separate PDF?

16 MR. SOUSA: Separate.

17 MR. MAXSON: Okay. So this, I'd just  
18 point out is coverage of -- see that UMTS down  
19 there -- that's coverage that's modeling the 3G  
20 service.

21 If we could go to --

22 MR. GOULET: The next one?

23 MR. MAXSON: -- the next one, please.

24 Thank you.

1                   And through the Chair, could I just ask  
2 Mr. Goulet: The orientations of these little  
3 triangles here, do they represent the direction in  
4 which the antennas that are being modeled are  
5 pointed?

6                   MR. GOULET: They do.

7                   MR. MAXSON: Okay. Thank you.

8                   So here we have the model where the Post  
9 Office Square sector was turned off, and the  
10 computer model more closely aligns with the drive  
11 test data. This is exactly what we did as well to  
12 visually validate and numerically, statistically  
13 validate our computer model.

14                   Yes. If we could go to the next one,  
15 please.

16                   This is another one that I had a question  
17 about, and that is, it says, 1900 megahertz PCS  
18 coverage. Oh, there it is. Okay. This is also 3G  
19 coverage. I don't need to comment more on that, but  
20 it stands for itself, and it's using the two highest  
21 thresholds that the applicant is relying on. I  
22 think that those thresholds were described as being  
23 for LTE though, and I'm not sure if this is intended  
24 to represent LTE as well as UMTS 3G.

1 MR. GOULET: Do you want me to answer  
2 that?

3 MR. MAXSON: If it pleases the Chair.  
4 There's a microphone here.

5 CHAIRMAN CLYMER: There's a microphone, I  
6 think, right next to the computer, right on that  
7 stand.

8 MR. GOULET: What we're doing here is as  
9 you stated in one of your reports, the 3G thresholds  
10 are not equivalent but comparable to what you will  
11 end up with 4G. For example, the output -- the ERP  
12 for the pilot channels of the 3G is much higher.  
13 It's at 43. For 4G, that same output power is only  
14 20 and 23, depending on which frequency.

15 So what happens is threshold-wise, you end  
16 up to be in the same place. So if it's bad on 3G,  
17 it's going to be poor coverage on 4G. If it's good  
18 on 3G, chances are it will be almost as good on 4G.  
19 The footprint -- the 4G footprint is going to be  
20 slightly less.

21 MR. MAXSON: Thank you.

22 So we're looking at a 3G footprint, but as  
23 we engineers often do, if there's a couple of  
24 decibels difference, we're not going to sweat the

1 difference.

2 If we could go to the next slide, please.

3 And this is with the proposed facility  
4 turned on, and something I would just like to  
5 illustrate is that in the process of doing the  
6 design, the orientation of the antennas at the  
7 proposed site has been adjusted to presumably to  
8 give the best possible coverage to streets and  
9 residences and commercial buildings as possible.

10 Typically in a cell site, especially on a  
11 tower, you'll tend to find them in a nice, even  
12 pattern like this; but when you're trying to get  
13 things just so, you do tend to tweak the positions  
14 of the antennas. So I was actually glad to see  
15 that, that there was an effort made to make the most  
16 of the proposed site.

17 The next slide, please.

18 Now, this is what is sometimes called best  
19 server or dominant server plot. And as Mr. Goulet  
20 was showing, this large olive-colored area here is  
21 almost entirely being served from one sector from  
22 Annursnac Hill, and he provides traffic data for a  
23 couple of different roads here, Commonwealth Avenue,  
24 Route 2, and 2A to illustrate just how much

1 vehicular traffic is in the influence of this one  
2 sector and how that increases the likelihood of  
3 there being a real crunch during rush hour on the  
4 availability of services from this sector.

5 I would point out that when you're looking  
6 at a plot like this, the idea of having a really  
7 dominant server in a particular area is the idea  
8 that one of the signals is really quite a bit  
9 stronger than all the rest.

10 This plot doesn't show things that way  
11 because this plot just simply says that wherever  
12 it's this olive color, Annursnac Hill's sector, this  
13 sector here, is the best one.

14 If we get to the edges like between this  
15 sector and this sector (indicating) of Annursnac  
16 Hill, right at the edge, the levels of those two  
17 sectors are going to be very similar. One is not  
18 going to be dominant with respect to the other.  
19 They're going to be very close. It's just that one  
20 might be a dB or two higher, and that's where you  
21 get the border.

22 When you get into situations where, as he  
23 was describing, you find some of these little  
24 patches where it's perforated, and the signal goes

1 back and forth, from one dominant server to another,  
2 then you might expect to have a more uneven service,  
3 a higher level of interference and just poorer  
4 quality performance.

5 And this is a new thing that was explained  
6 to us by C Squared that hadn't previously been  
7 brought up by AT&T in its presentation of its needs  
8 and that is this question of what can they do to  
9 offload call traffic and data traffic from the  
10 Annursnac Hill sector?

11 Now, there hasn't been any additional  
12 quantitative information to illustrate, you know,  
13 other than simply saying there's a lot of cars;  
14 therefore, there's going to be a lot of demand on  
15 this one sector here, and that's -- I think as we go  
16 forward in reevaluating wireless facilities for  
17 zoning permits, it used to be you could look at a  
18 gap and go, yeah, I think that's a gap, but now I  
19 have much more complex, much more subtle kinds of  
20 reasoning for whether a new facility is needed, and  
21 the applicant has attempted to give a sort of a top  
22 level articulation of that reasoning.

23 What I'd like to do now is -- thank you  
24 for that -- I'd like to just go through some of my

1 notes from Mr. Goulet's presentation.

2 First of all, I want to correct a couple  
3 of errors. What I described in my report is that I  
4 drove around with my telephone, my wireless phone,  
5 dialed in through the telephone network to my office  
6 where it was on music on hold. I was not on a data  
7 service. I was using the music on hold as if it  
8 were a conversation with someone at the other end.  
9 And it's a way to monitor the continuity of the call  
10 and whether or not you get any interruptions that  
11 don't drop the call but might interfere with the  
12 quality of the connection.

13 So his statement that I was using Pandora  
14 or some other similar service is completely  
15 incorrect, and his conclusions regarding my use of  
16 the phone in that way are also incorrect.

17 He pointed out a section of Route 2, and  
18 this is one of the valuable purposes for collecting  
19 thousands of data points is that you could look at a  
20 500-foot section of Route 2 and find in it, a  
21 150-foot section of signal below signal threshold.  
22 At 50 miles an hour, that 150-foot section lasts one  
23 second.

24 So this gets you into the questions of

1 what's significant? Is a little bump in the signal  
2 along the highway going to be significant? It might  
3 be more significant for a voice call, which wants to  
4 maintain continuity than for a data connection,  
5 which can quickly recover if there's a dip in signal  
6 strength for a second or two.

7 So the question in terms of that is what's  
8 the magnitude of the difficulty at any given point;  
9 and in your description, your bylaw description of a  
10 significant gap for the town's perspective, there is  
11 that issue of coverage holes, you know, small places  
12 where it might not be material either because  
13 there's nobody there or because it's small.

14 I also want to point out that Isotrope  
15 also has test equipment worth many tens of thousands  
16 of dollars; and some of our test equipment, which is  
17 also used by the industry quite regularly, plugs  
18 into telephones, and it measures what the telephone  
19 is seeing and collects thousands of data points.

20 So if I had done a drive test in the full  
21 formal way, I would have collected the same data  
22 that Mr. Goulet collected, and I would have done so  
23 with what he calls industry standard equipment.

24 So just by way of example, I have taken a

1 9,000-mile drive test twice in the State of Utah,  
2 three weeks, driving just about every road in that  
3 state, collecting through-put data on wireless  
4 services. This last time we did it in November, we  
5 had about 10 wireless devices in the vehicle, and a  
6 radome on the roof. So we also are experienced. We  
7 also know what we're doing.

8 So when I talk about the fact that you can  
9 use a telephone to give you information about the  
10 network, think about what you look at on these maps.  
11 You're looking at signal strength maps because they  
12 present the simplest indication of expected  
13 performance.

14 Yes, there are some great subtleties when  
15 you get a drive test, and you've got little dips in  
16 coverage or you don't have a good connection  
17 handoff, that kind of thing; but ultimately the  
18 question of whether or not there is the provision of  
19 personal wireless services is whether or not a phone  
20 works, whether or not a data set works. And so that  
21 was what I attempted to do with my informal drive  
22 test using a phone that could give me the signal  
23 strength; and Mr. Goulet has concluded that I was  
24 measuring the wrong signal strength. He doesn't

1 know that. He's just concluded that on your behalf.

2 And then in addition to signal strength is  
3 the call continuity. Remember the can-you-hear-me-  
4 now guy from a decade ago from Verizon? One of the  
5 tests that's done often is call continuity testing.  
6 Call blocking testing. It's not just measurements  
7 of signal parameters, which is good information, but  
8 also how is the system performing? Is it handing  
9 off the call smoothly?

10 The drive test that we're looking at, the  
11 data that was provided to us doesn't tell us whether  
12 or not calls are being handed off smoothly. It  
13 doesn't tell us whether calls are being handed up  
14 from the PCS band, down to the 800 megahertz band.  
15 It simply tells us what the signal strength of a  
16 particular reference signal in a particular channel  
17 is. And that's useful, but it's not the only way to  
18 do it, and it's not the only bit of information.

19 So I think in terms of degree, yes,  
20 absolutely, if you conduct a drive test with  
21 sophisticated, expensive equipment, and you get lots  
22 and lots of data points, that's good; but there's  
23 something to be said for the can-you-hear-me-now  
24 test, which is call continuity, data continuity

1 through, or even signal strength with these devices.

2 Oh, in one of the plots, it's not up now,  
3 but one of the comments -- I'd like Exhibit 4, I  
4 think it was was the importance of reaching  
5 residences.

6 One of the difficulties with this proposed  
7 site is in my report and it's also in the  
8 information from the applicant which is at what  
9 point is it significant -- a significant gap in  
10 terms of residences served or not served sufficiently  
11 and whether or not there are alternatives to that.

12 So we're talking about numbers in the  
13 order of 100 to 200 residences. I think it was -- oh,  
14 no, I'm sorry. That was population. Anyway, the  
15 information is in the report.

16 I would also point out that while it was  
17 not presented in this hearing, C Squared performed a  
18 drive test of the 800 megahertz band. I requested  
19 it, and it was not made available to me, and the  
20 reasoning has been given to you tonight that for  
21 some reason, 1900 megahertz is the point of  
22 reference; even though out at the edges of coverage,  
23 the system can ratchet down and hand a user off to  
24 800 megahertz, 1900 megahertz is being presented to

1 you as the reference.

2 And to Mr. Chin's question earlier about  
3 how far these facilities cover, that's the great  
4 unknown. You know, we thought back in 1997 that  
5 there would be a handful of 160- to 200-foot cell  
6 towers, and we'd all have coverage. And now we're  
7 getting to the point, as Mr. Goulet mentions, that  
8 we're getting antennas put on utility poles, shorter  
9 commercial buildings, more frequently placed in the  
10 region; but in a community like Acton, where you  
11 don't have any malls, it's often going to have to be  
12 a cell tower of some kind to get the antenna height  
13 that they're looking for.

14 So if 1900 megahertz is used as a  
15 reference, and I think it was at a previous meeting  
16 that someone observed this, all those white spaces  
17 on the map that show in-building and in-vehicle  
18 coverage and nothing else are, by definition, by the  
19 applicant's definition underserved, and they would  
20 need something in the future. So trying to keep it  
21 all in context.

22 Give me just a moment. I just want to  
23 make sure I haven't missed anything important.

24 CHAIRMAN CLYMER: Dave, just because we

1 had this at the prior meeting, your numbers on  
2 population -- your numbers were population count,  
3 and at 74, they were 109 net increase, and at 92,  
4 they were 184 net increase. So you're 100 to 200.  
5 Just because I know the Planning Board doesn't have  
6 that in front of them and people in the audience  
7 probably don't either.

8 MR. MAXSON: Yeah. Thank you.

9 And if I could just comment. I know that  
10 there's some concerns among residents about whether  
11 or not Isotrope should conduct a full formal drive  
12 test.

13 Now that we have resolved all the  
14 discrepancies in the drive testing, and we're able  
15 to validate our computer model against that drive  
16 test data, I don't think it's necessary to do any  
17 other formal drive testing.

18 I think there is weight that you can give,  
19 in my opinion, to the two informal drive tests  
20 because they were continuous, and they were showing  
21 in different ways the availability of wireless  
22 service.

23 I think one thing to keep in mind is that  
24 those were -- actually I'm not certain about the

1 video that was submitted, but mine was conducted  
2 when there was not foliage; so it would be a little  
3 bit on the optimistic side, but still, with the  
4 signal levels that we were getting, even if there  
5 was some degree of loss due to the foliage, it does  
6 not look like it's largely a signal strength problem  
7 which really does get us down to the question of  
8 capacity, and the demand with offloading traffic  
9 from other sites.

10 Thank you.

11 MR. DUBE: Before you stop, can you sum up  
12 for us what you think the most reliable data that  
13 you have access to shows about whether there really  
14 is a significant gap or not. Can you summarize that  
15 particular point for us.

16 MR. MAXSON: Hmm. Yeah. I try -- I try  
17 not to opine on whether or not there's a significant  
18 gap because -- and I just want to preface it with  
19 this. I try not to opine on that, specifically  
20 whether or not there is a significant gap because  
21 ultimately it's something that local boards and the  
22 courts have to hammer out; but in terms of the  
23 evidence you have on the record, in my opinion, you  
24 have coverage data from Isotrope and coverage data

1 from C Squared Systems with computer modelling  
2 that's validated that are quite similar that show  
3 where the in-building and in-vehicle level of  
4 service for 1900 megahertz is.

5 If you're inclined not to include 800  
6 megahertz, that's useful information. If you want  
7 to look at the network as a whole, including other  
8 frequency bands, you have no data on that, other  
9 than the fact that the informal drive tests  
10 naturally incorporate the other bands.

11 When I drove around and picked up signal  
12 strengths on LTE on my phone, it was finding the  
13 best server of LTE. So that would have been  
14 probably at the 700 megahertz band if that's turned  
15 on; and then when I was driving around with a phone  
16 call on my phone, that was picking up whatever the  
17 best server was, and it could have been at 800  
18 megahertz, or it could have been at PCS.

19 So depending on what you're using to use  
20 as -- to bracket your decision about a significant  
21 gap, you have these different data sets.

22 As I was concerned at the very outset, I  
23 still am that the coverage plots supplied by AT&T  
24 seem to leave much to be desired; so I would look

1 more closely at C Squared and Isotrope's coverage  
2 plots.

3 MR. DUBE: Thank you.

4 CHAIRMAN CLYMER: Dave, one question on  
5 the population impact of. I believe you made a  
6 comment that suggested that the way that AT&T looked  
7 at that was based on the average density of Acton  
8 rather than the area itself. Do you recall that  
9 from your report?

10 MR. MAXSON: I do. It's not -- although  
11 it's not from the average density of the entire  
12 town. That we verified. But it does look like it's  
13 a different kind of a calculation technique. I'm  
14 not clear on what it is.

15 So I would just say AT&T has supplied you  
16 with data. We have supplied you with data. They  
17 use probably slightly different population counting  
18 methodologies, but if you compare Isotrope's data  
19 and AT&T's data about population counts, you can see  
20 that there's not a huge difference. Going from 100  
21 to 200 is doubling, but in proportion to the total  
22 population in the town, it's still a relatively  
23 small number.

24 MR. YACOUBY: Can I ask a question? I

1 just want to make sure that --

2 CHAIRMAN CLYMER: Yeah.

3 MR. YACOUBY: There's a lot of complex  
4 engineering we're talking about here clearly; but I  
5 think what I heard you say is the data, the way you  
6 analyzed it and C Squared, if you're talking apples  
7 and apples, and you're arriving at similar conclusions  
8 because if you're looking only at 1900 versus eight,  
9 that's where the devil in the detail comes in terms  
10 of whether you include those frequencies or not.

11 Did I hear you correctly?

12 MR. MAXSON: Yes. If you simply stick to  
13 1900 megahertz, I think you'll find a reasonable  
14 degree of agreement between C Squared's and our  
15 computer models.

16 MR. YACOUBY: Okay. That's --

17 MR. MAXSON: Because they both were  
18 validated by the drive testing.

19 MR. YACOUBY: Thank you. That was  
20 important to understand.

21 Thank you.

22 CHAIRMAN CLYMER: What I'd like to do, and  
23 we're obviously going to talk to both of you again;  
24 but there's five people who I know have spent quite

1 a bit of time sitting here, so I'd like to give them  
2 a chance to come up to the microphone.

3 I would like to try to keep it to less  
4 than ten minutes. It would be great if it was five,  
5 just so we can continue moving on.

6 So if you could go to the microphone,  
7 identify yourself, and that would be great.

8 MR. MAGLOTHIN: Good evening. Hi. I'm  
9 Mike Maglothin at 288 School Street.

10 Just a little bit of background real quick  
11 on myself. I'm not a RF engineer, but I've done  
12 high-end RF design and engineering work for the  
13 Department of Homeland Security, DOD, Department of  
14 Energy. I've actually designed for Boeing. Most of  
15 the telecommunications layout for SBInet, which is  
16 the \$4.2 billion border project that ended a few  
17 years ago.

18 My expertise is actually with propagation  
19 analysis, which is the predictive model that the  
20 applicant refers to. The predictive model, in this  
21 case, is probably the roughest I've ever seen. It's  
22 not something that you would use for this type of  
23 frequency, power, and short-space application, where  
24 you're talking about a mile or less.

1 And is it all right if I go up here?

2 CHAIRMAN CLYMER: Yeah, there's a  
3 microphone right there; so just grab that one right  
4 by the computer.

5 MR. MAGLOTHIN: So when you're referring  
6 to this tower, you're really looking at this area  
7 that's impacted, nothing really larger than this.  
8 The reason is because it sits in a fish bowl. It's  
9 tucked in between a number of different hills.

10 Now, in propagation analysis, the colors  
11 that are shown up here represent lots of different  
12 things, but the base, the starting point of it is  
13 line of sight. It's obstructions. And it's a  
14 worst-case scenario for engineers. I can't see  
15 whatever I'm looking at. I can't communicate with  
16 it. It's oversimplifying it for cellular  
17 frequencies because you can actually get through  
18 walls and trees and some things, and there's other  
19 factors that come into play on this like path loss  
20 and the radial lobe of the transmission signal from  
21 a certain antenna, and all these other factors.

22 But if you focus at the route, which is  
23 line of sight, and you're looking at these pixels  
24 here, generally that pixel is probably -- it's hard

1 to say from here, but it's probably 50-meter  
2 resolution, which would be something I would  
3 plan -- at 50-meter resolution, I would plan maybe  
4 if I was looking at a radius of 10 miles, not at the  
5 one mile or less level.

6 Now, there is data that's available  
7 publicly through Massachusetts government site  
8 Geographic Information System Portal that will give  
9 at the two meter or better or even lidar probably  
10 now the two-foot level digital elevation model  
11 terrain, which can be inputted to most of these  
12 models and used.

13 Now, then you put on top of that path loss,  
14 such as vegetation. Being in a suburban area, you'd  
15 have some buildings and some loss from those types  
16 of things, but the predictive model that you're  
17 seeing here is not -- I couldn't say it's bad or  
18 good from it. Just that I -- to me it's total  
19 garbage. It's not something I would have ever  
20 prepared for any of my customers in the past or  
21 relied on.

22 Now, the drive test, I'm not going to  
23 cover anything else about that except for what  
24 really Mr. Maxson had mentioned regarding

1 that -- I'm sorry. This is the wrong one.

2 I don't recall which exhibit it is. The  
3 color is basically where the roads are located. I  
4 mean that's real-time data unless they've altered or  
5 played with that. They can play with the data.  
6 That's fine. I mean that's actually, you know,  
7 collected and trustworthy, but I would refute and  
8 very much argue any of the colors that you're seeing  
9 in between the roads and the greens and blues are  
10 almost useless without going out and actually  
11 conducting a study where people walk the ground and  
12 do a validation of that data; otherwise, it needs to  
13 be a much higher resolution. It's something you're  
14 going to see a lot more blocking, a lot more smaller  
15 pixels too. And if we wanted to go with a  
16 predictive model such as this, I would just propose  
17 that the applicant provide something that's a little  
18 bit more modern, more up-to-date.

19 The other issue I had was with the server  
20 data. And maybe I'm not understanding this one so  
21 well, but it almost looks as if anything in white,  
22 nobody gets any coverage whatsoever. None of the  
23 servers are handling anything, which would mean that  
24 anybody living in Lexington Circle or anybody driving

1 on Laws Brook has no cell phone service. So I just  
2 doubt the validity of some of the information  
3 presented; and that's why I would like to have a  
4 third-party review conducted with somebody with much  
5 higher resolution data, and I'd be happy to offer  
6 referrals for folks who could do that, what kind of  
7 data could we supply them in order to get results  
8 from, if we really do need to do a predictive  
9 analysis.

10 MR. SOUSA: Mr. Chairman, does it make  
11 sense for Mr. Goulet to respond individually or at  
12 the end?

13 CHAIRMAN CLYMER: Yeah, I think it would  
14 be good to just understand what his reaction was  
15 since.

16 MR. SOUSA: Sure.

17 MR. GOULET: To clarify a couple of  
18 things. Number one, we are using 30-meter data.

19 Number two, we're using terrain data which  
20 we're obviously not showing on here, but I believe I  
21 have a terrain plot, and we're using clutter data,  
22 so -- can we put one slide up.

23 MR. SOUSA: Sorry.

24 MR. GOULET: Now, to ask carriers or

1 anybody doing a network design to go out and walk  
2 50,000 square miles and go door to door and inside  
3 people's homes, obviously that's not practical, but  
4 if you look at that, I kind of take umbrage at the  
5 fact that he thinks -- if you look at the light  
6 yellow, which is the prediction, underneath that  
7 layer is terrain. We're using knife-edged  
8 defraction is the tool, this software tool which is  
9 rather sophisticated and high end. You have every  
10 30 meters, which is 90 by 90 feet. So you take a  
11 90-by-90 foot block, the smallest pixel on this plot  
12 that you could find is going to be 90 feet by 90 feet.

13 If within that 90 feet by 90 feet, it's  
14 maple trees, that's what it assigns to that bin. If  
15 within that it's a field, there's 13 clutter -- what  
16 we call clutters. It's a terrible word, but a  
17 clutter in the RF world is anything that impacts the  
18 radio frequency signal. Every single one of those  
19 sites that's up there we're using 2,800 radials. So  
20 you draw -- you draw four radials, and you split  
21 those four, and you keep going until you have 2,800  
22 radials going for a distance of 5 miles and along  
23 that radial path what it's doing -- what that  
24 software is doing is it's looking at every single

1 bin underneath every single radial, and it's saying  
2 okay. In this bin, it's commercial buildings. In  
3 these bins over here, it's densely populated but  
4 with trees. In this -- in these bins over here,  
5 before I get to Route 2, it's field, and it tells  
6 you exactly what the coverage should be at that  
7 particular location along those 2,800 radials.

8 So it isn't just -- and if you look real  
9 close, right here (indicating), you see on the drive  
10 test, the dark yellow is the drive test. You see  
11 yellow, red, yellow, red, and under here, you see  
12 yellow, red; and you can see in the prediction, the  
13 same thing that there are red areas in the  
14 prediction that were predicted to be the exact same  
15 coloring or a threshold as the drive test, and you  
16 look here, and it goes down to blue, and it changes  
17 to green. And where the drive test data is changing  
18 to green, the predictive model is green.

19 Now, you take every single one of those  
20 data points, now that little bin before that I  
21 showed, that little 500 feet, I only grabbed a  
22 sample of data to show you how much data is  
23 contained every 30 meters that the vehicle travels.

24 You're getting hundreds of data points,

1 pieces of information within that 30-meter bin.

2 So anyway my point is it is a calibrated  
3 model. You can't go door to door. You can't go in  
4 people's homes; so the only way carriers can do this  
5 is with having attuned models and do a predictive  
6 analysis, but it is rather sophisticated. I could  
7 show you the terrain plot for this area, and it  
8 gives you all the elevations and every place that is  
9 terrain, on top of that terrain, there's trees or  
10 buildings or something.

11 CHAIRMAN CLYMER: Okay. Mike, did that  
12 help answer any or do you share -- I mean did that  
13 help at all or is it still?

14 MR. MAGLOTHIN: I think I could probably  
15 help the other way a lot more.

16 A good example would be in this case,  
17 we're getting greens and blues in here. Getting  
18 yellows in this section which should be blue.

19 MR. GOULET: No, there's yellow --

20 MR. MAGLOTHIN: It meets the fidelity at  
21 the tower location site that's of the utmost  
22 importance. In this case, we're looking at this  
23 resolution.

24 The propagation data from AT&T can

1 actually be updated, based on the data that was  
2 collected via the drive test. So it's not  
3 necessarily independent. It's separate of each  
4 other.

5 It's very simple to update this  
6 propagation model with what you did receive during  
7 the drive test to make them look like they match,  
8 and that's why I think an independent drive test is  
9 really important. But the fidelity of level between  
10 each of these dots is much greater than anything on  
11 the propagation, and this is really this kind of  
12 dot, dot, dot, dot, dot result is what you need to  
13 see out here too (indicating).

14 This is -- so if you're running at 30-meter  
15 which is going to be probably SRTM, which is the  
16 Shuttle Radar Topography Mapping, which was conducted  
17 by Shuttle Atlantis from 1989 to 1993, that's really  
18 low resolution trade data. There's 10 meter that's  
19 available out there. There's lidar that the State  
20 of Massachusetts has paid for, and all that can be  
21 consumed by the same -- I'm not familiar with that  
22 software.

23 MR. YACOUBY: Can I ask a question. We're  
24 getting into dueling -- quite honestly, I'd like to

1 hear from Mr. Maxson. I'm hearing you have  
2 expertise; they have expertise. It sounds like in a  
3 totally different area.

4 You're talking about the fidelity of all  
5 this data. I think you're losing the board.

6 MR. MAGLOTHIN: Okay.

7 MR. YACOUBY: And I personally don't think  
8 anybody's trying to mislead. I think it's a valid  
9 question what data sets you're looking at which is  
10 why I asked Mr. Maxson before did you arrive at a  
11 different conclusion; but it depends on what are  
12 your assumptions and what you're looking at. It's  
13 critical in terms of -- what I'm hearing you saying,  
14 quite honestly, is a lot of technical stuff out  
15 there that I cannot correlate. So it's not helping.

16 MR. MAGLOTHIN: I would say -- it's my  
17 recommendation is to wash the predictive model out  
18 of your head and not even take that into account.

19 MR. YACOUBY: But I mean, the drive test  
20 data --

21 CHAIRMAN CLYMER: Well, well --

22 MR. YACOUBY: You're saying don't use the  
23 model.

24 MR. MAGLOTHIN: Yes.

1 MR. YACOUBY: And you're not in the  
2 industry; so I'm not sure which one -- I don't know  
3 what to believe. If I had to vote on this today, I  
4 would have to abstain because I'm getting completely  
5 conflicting information that I could not make a good  
6 judgement on.

7 CHAIRMAN CLYMER: So why don't we do this,  
8 Ray. Why don't you just finish your point, and then  
9 we'll hear from Dave, and then we can take that all  
10 into consideration.

11 MR. MAGLOTHIN: So my point is simply that  
12 I would kindly ask that you put a lot of thought  
13 into whether or not to take the predictive model and  
14 the propagation modeling into account because really  
15 all it is it's really a whack. It's just truly a  
16 guess. It's a best guess by the industry, and most  
17 folks can twist the parameters and the path loss and  
18 all these other frequency and power and all this  
19 into their favor. It's very easy to do that with  
20 little tweaks in the model; so either if you need to  
21 see predictive data, get that from an independent  
22 reviewer or don't consider predictive data at all.  
23 Just look at what the drive test provided and then  
24 take into account what a new tower here will provide

1 to the areas that are already in green because it's  
2 not going to provide anything up here (indicating).  
3 That's why you see this north and south line.  
4 There's a hill that will cut everything off. So  
5 that tower will not be providing anything over here  
6 that's of issue.

7 MR. MAXSON: Well, it's interesting to  
8 hear that the analysis that I did is garbage. I  
9 disagree.

10 Mr. Goulet, I think, did a fine job  
11 explaining that we've got a number of layers of  
12 information, and we've got topography. We've got  
13 clutter data, and then we have a computer model that  
14 attempts to integrate that with the behavior of the  
15 radio wave at the frequencies. We don't know where  
16 every tree is. We don't know where every rock is.  
17 We can't get down to that level of precision. And I  
18 don't think there's a need to and here's why.

19 If you were to look at that image and just  
20 take it out of focus with your eyes, take your  
21 glasses off, put somebody's glasses on, so it gets  
22 blurry, it's just kind of smoothed out the rough  
23 edges. That's about what would happen if you had  
24 four blocks for every block on that picture. In

1 other words, if you had higher resolution, they'd be  
2 smoother edges. But what we're really talking about  
3 here is, for instance, as the example was given, if  
4 you're on Route 2, and you're heading west past  
5 School Street, and you get to a change in elevation,  
6 and there's also, you know, terrain to your right  
7 that occludes the signal from Annursnac Hill, and  
8 suddenly it drops off, do we have it exactly the  
9 right location? Does my map show it in exactly that  
10 spot? Maybe not. Are we off by two or three  
11 pixels? Maybe. But what's really material here?

12           What's material is not the question of  
13 whether there are little holes that we're missing,  
14 but whether the gist of the coverage -- and there is  
15 correspondence. It's never perfect, but there's  
16 correspondence between the computer model and the  
17 drive test data visually.

18           It's a little bit arbitrary because we  
19 can't look at a map that has 500 colors; so we take,  
20 you know, boundaries and provide each one with a  
21 different color. So there are going to be places  
22 where the computer might say the signal is expected  
23 to be stronger than the drive test says or vice  
24 versa. So really we're looking at the gist of

1 things.

2           There have been times when I've been in  
3 hearings where the question of the alternative  
4 location or the height of a tower it really  
5 materially depends whether or not they're going to  
6 be able to hang the call and keep it going through a  
7 crevice before it connects to coverage from a cell  
8 site on the other side of the crevice. And then you  
9 can do all the computer modelling in the world. You  
10 can have all the precision you want, but you still  
11 won't be sure; and the only way to test that is to  
12 stick up a crane, put up a test antenna, and drive  
13 the route to see whether or not height A or height B  
14 makes the connection through the crevice.

15           So I'm satisfied with the degree of  
16 resolution that we have here. It gives you the gist  
17 that you need to look at in order to try and come up  
18 with an assessment about whether the applicant's  
19 claim of a significant gap satisfies the bylaw  
20 criteria.

21           CHAIRMAN CLYMER: So, Dave, before you  
22 conclude on that, maybe I misinterpreted the  
23 comments, but I kind of heard that the drive test is  
24 important, which I think you've also said, you know,

1 because the drive test really is real. It's not  
2 just a computer model. So in my hearing, I mean, I  
3 think you were kind of in that same -- maybe I  
4 misinterpreted your comments before, but I kind of  
5 heard the same thing, to a different degree, but I  
6 think the last respondent said that the drive test  
7 is really important; and I think you were suggesting  
8 the same that it's not just the computer models, but  
9 it's what you -- and you do that actual drive tests,  
10 it's the results that you see that are important.

11 MR. MAXSON: Yes. And that gets us back  
12 to some of these places where the drive test might  
13 stay green longer than the underlying computer model  
14 or vice versa. It's not just what your eye is  
15 putting together with arbitrary thresholds. It's  
16 what we do, C Squared Systems and Isotrope do back  
17 at the shop. We'll run a statistical analysis and  
18 see whether we have tuned our model well enough that  
19 the mean error is, on the average, it's about right.  
20 And the standard deviation, the amount of error plus  
21 or minus, depending on the data points is brought  
22 down to a reasonable degree of standard deviation.  
23 And I'm sure that C Squared Systems has assured  
24 themselves that what they're presenting has those

1 features as we have as well.

2 So I'm comfortable with what you're  
3 looking at.

4 CHAIRMAN CLYMER: Okay. Anyone else from  
5 the public like to speak? Feel free.

6 MR. QUINN: Hi, Jim Quinn, 299 School  
7 Street. Thank you.

8 Just a couple of quick things. I'll try  
9 to keep my data a little bit less technical so we  
10 can all grasp it.

11 Back on February 9th, just out of curiosity,  
12 to see if there was a substantial coverage gap on  
13 Route 2 and sort of just to satisfy my own curiosity,  
14 my neighbor, Meaghan Clark and myself took a test  
15 drive using an AT&T phone. And for fairness sake, I  
16 had gone out the day previously to Best Buy, and I  
17 bought a \$9.99 pay-as-you-go phone, just to see what  
18 would happen. We took a ride. We videotaped it.  
19 It had audio. What we did before we left my home at  
20 299, we called her home, put it on speaker, put it  
21 by a radio and proceeded to drive onto Route 2, down  
22 around the rotary, back up west to Piper/Taylor,  
23 made a U-turn, came back down on Hosmer Street and  
24 drove around several of the back streets where, you

1 know, according to the applicant, there's also a  
2 coverage gap as well. And lo and behold, we had a  
3 perfect signal the whole time. It didn't drop the  
4 call. We didn't lose the call. We heard the music  
5 the whole entire time. And I know that's not  
6 scientific or even semi-scientific, but it proved to  
7 me that with that phone, driving around, not a very  
8 big, high tech phone, we didn't lose our signal.  
9 And I know Meaghan also did a test on her much more  
10 sophisticated smartphone and had the same results.  
11 We both used AT&T. We both drove in the areas where  
12 the gap supposedly exists. We didn't lose any  
13 calls. So that was my contribution to the cause.

14 And one other thing I wanted to bring up,  
15 there was a note made from the last meeting on  
16 January 7th, and it referenced a -- let's see, a  
17 redacted copy of SBA's lease being provided from the  
18 applicant. That was one of the -- let's  
19 see -- yeah, that was one of the deliverables that  
20 was referenced at the last meeting. I wasn't sure  
21 if that was provided or not.

22 CHAIRMAN CLYMER: We do have that. It is  
23 not -- I think there were some reasons why it wasn't  
24 posted on the system. I don't -- Kristen, can you

1 comment on that?

2 MS. GUICHARD: You have it in your  
3 packets.

4 CHAIRMAN CLYMER: We have it in our  
5 packets, but it wasn't --

6 MS. GUICHARD: It was requested that it  
7 not be posted by the applicant, but all the Planning  
8 Board members have it.

9 MR. CHIN: I thought it said it was going  
10 to be provided. I didn't look --

11 MS. GUICHARD: It's in your packet.

12 MR. CHIN: I have it here. What I'm  
13 saying I thought it was going to be sent to us.

14 MR. SOUSA: We did send it to you.

15 CHAIRMAN CLYMER: It came through the  
16 Planning Department because there were some  
17 sensitivities to posting it on DocuShare.

18 MR. YACOUBY: It's a legal document.

19 CHAIRMAN CLYMER: I haven't read it fully  
20 to address that issue, but we certainly have it now.

21 MR. CHIN: I have it right in front of me.

22 MR. SOUSA: Mr. Chairman, can I address  
23 that?

24 MR. QUINN: Thank you.

1 CHAIRMAN CLYMER: Yes.

2 MR. SOUSA: And so --

3 CHAIRMAN CLYMER: I didn't mean to cut you  
4 off. Are you all set?

5 MR. QUINN: That's all I had.

6 CHAIRMAN CLYMER: Okay. All right.

7 MR. SOUSA: Mr. Chairman, in response to  
8 the last hearing, we did provide a copy, a redacted  
9 copy of the lease agreement between SBA and AT&T  
10 Wireless. The nature of the contract is that it  
11 does have a confidentiality provision, which states  
12 that we cannot disclose it to third parties without  
13 the consent of both parties; so that's why we have  
14 some sensitivity regarding posting it.

15 CHAIRMAN CLYMER: Okay. There was one  
16 question on it.

17 MR. SOUSA: Sure.

18 CHAIRMAN CLYMER: Each page has a spot for  
19 initials. I'm assuming that's only if there's  
20 changes on the page? Is that why none of the pages  
21 are initialed?

22 MR. SOUSA: Typically, yes. That's  
23 correct.

24 CHAIRMAN CLYMER: Okay. Thank you.

1 MS. CLARK: Mr. Chair, Planning Board, my  
2 name is Meaghan Clark, and I'm a resident near the  
3 proposed location of the cell tower.

4 I just wanted to let you know that the  
5 additional test that Mr. Quinn mentioned that I did  
6 was of the duration of 45 minutes. I have a  
7 toddler, who likes to sleep in the car; so it was a  
8 perfect day for me to get out and put him to sleep  
9 with pop music. I was dialed in as others were into  
10 my home line that was set up next to a stereo.

11 Also another just comment, one thing I've  
12 observed in these conversations about whether this  
13 technical data is truly relevant and how much weight  
14 should be given to it versus the drive tests that  
15 have been done, a lot of us probably work for  
16 technology companies; and as anyone in technology  
17 will tell you, user experience is very important,  
18 and I just would like to point that out in thinking  
19 about the validity of these tests and how much  
20 weight we should give one or the other, the user  
21 experience being measured more so, I think, by the  
22 drive tests that have been done.

23 So thank you very much for all of your  
24 time put into this. We really appreciate it.

1 MS. QUINN: Kathy Quinn, 299 School  
2 Street.

3 I guess I want to start out with -- do I  
4 give you what I would like to submit to the board?

5 MS. GUICHARD: We can take it.

6 MS. QUINN: Today we printed off the AT&T  
7 domestic wireless data coverage information for  
8 today that AT&T provides to prospective customers,  
9 and it is 100 percent best for the area that we're  
10 discussing. And I'm not suggesting that AT&T is  
11 lying here (indicating) or here (indicating) on this  
12 plot -- do you have a little pointer thingy?

13 I've never done this before. I don't want  
14 to kill anybody.

15 MR. SOUSA: There it is. Right there.  
16 Just hold it down.

17 MS. QUINN: I should have brought my cat  
18 toy.

19 What I'm suggesting is that this is taking  
20 into account the 174 small towers and the 54 larger  
21 towers that I submitted existed in a 4-mile radius  
22 that these two drive tests are just talking about  
23 information from Post Office Square, which is up  
24 here (indicating) somewhere and from Annursnac Hill,

1 which is here (indicating); and this one at this  
2 time doesn't have the technology turned on at Post  
3 Office Square, and nothing is turned on here at the  
4 top of the hill that overlooks this little valley  
5 where we live.

6 So right here (indicating) is the suggested  
7 location with best quality, blue and green in the  
8 fields near my house already without a new cell  
9 tower. This here (indicating) is 180 feet lower  
10 than right here (indicating), and there's a church  
11 at the top of this hill that already has a cell tower  
12 in it from the last meeting that we went through  
13 with SBA Tower that would already be twice the height  
14 of any proposed cell tower that would go down here  
15 at the bottom of the hill. Just putting in their  
16 technology in an already existing facility, they'd  
17 already be twice as high into the sky.

18 That also means that the reason why this  
19 here (indicating) is all yellow isn't because it  
20 isn't all covered like they show on their maps to  
21 the public. So this is not a lie. It really is  
22 best quality. What it is is they're not showing any  
23 information from I think this is called Great Hill?

24 MR. BOURDON: Great Hill, yes.

1 MS. QUINN: Great Hill totally covers this  
2 area, and down here on River Street, since the last  
3 application is another new cell tower, they're not  
4 showing any information on where the cell tower on  
5 River Street is covering. So, I think, if you were  
6 to get a real picture of this technology on existing  
7 cell sites, which they must do first, you would see  
8 that actually it is just like they say on the  
9 information they provide to the general public that  
10 really this entire area is all best quality, and  
11 they have some other motivation for wanting a tower  
12 here (indicating).

13 Now, let's say that I'm completely wrong  
14 because I'm not an engineer just somebody with, I  
15 hope, a high IQ. You could still say, well, we've  
16 not answered the question of whether there are any  
17 other sites that are available in this area that we  
18 haven't looked at yet; and I think that Mr. Maxson  
19 pointed out that the DOT, when he spoke to them,  
20 were amiable to a site that's located up next to the  
21 church that's in a tree line that would definitely  
22 blend better with a cell tower. Have we vetted that  
23 option or any of the other exhaustive lists of  
24 options that an applicant is supposed to do before

1 they get to the point where they're insisting on a  
2 specific location?

3 I don't feel like that's been done yet,  
4 and I would like that question answered definitively.

5 CHAIRMAN CLYMER: Well, I think that the  
6 DOT site that was answered that it's not available  
7 today.

8 MR. YACOUBY: Right.

9 CHAIRMAN CLYMER: And that was answered,  
10 but, again, I don't have the answer from the  
11 applicant.

12 MS. QUINN: But neither is the LTE service  
13 that they're telling you they're going to provide.  
14 It's not available today.

15 Also I wanted to point out that since the  
16 balloon test was performed, the water --

17 MR. BOURDON: Department.

18 MS. QUINN: -- department -- thank  
19 you -- has removed all of the mature pine that is in  
20 that line sight of where the cell tower would be. I  
21 wasn't sure if you were aware that they took down  
22 dozens of mature pine trees. So now the location  
23 looks substantially different. It is a much more  
24 wide, open fieldy look than it was at the time of

1 the balloon sight, and a cell tower is going to be  
2 that much more of a sore thumb in what is really a  
3 picturesque landscape, which is why I encourage you  
4 to make sure that every other site is vetted because  
5 otherwise we're losing that, and we're setting a  
6 precedent that as the Town of Acton, we don't really  
7 care what people see when they enter our community,  
8 specifically for what we're talking about the town  
9 bylaw is saying that a coverage gap or a service gap  
10 is an area that if a remote user of a compatible  
11 user service device, while located within such  
12 geographic area is highly likely to be unable to  
13 reliably connect or to communicate with a compatible  
14 carriers' personal wireless service network.

15 I don't believe that that litmus test has  
16 been proven in any manner, and I also wonder if the  
17 amount of people served, which would be as everybody's  
18 gone over, the one to two seconds it takes to travel  
19 the half mile supposed gap in the field or the one  
20 to 200 people, which is less than 1 percent of the  
21 population of Acton is that truly what we could  
22 describe as a coverage gap? Is that what we want to  
23 set up as Acton's coverage gap for the future? Is  
24 that the litmus test that someone needs to achieve?

1 Because it would be really easy to achieve that in a  
2 lot of other places, and suddenly we'd be having to  
3 revisit the bylaw and put cell towers in the middle  
4 of somebody's neighborhood.

5 So I wondered too, and I mentioned this at  
6 the meeting the last time they brought this before  
7 us does the town need to make way for every  
8 incremental change in technology? Because LTE might  
9 be the wave of the future, or they might come up  
10 with something that totally makes it irrelevant  
11 before they have a chance to rule it out. It's  
12 happened before. Technology is changing all the  
13 time. So if this isn't something that they already  
14 have in place, do we want to support it because that  
15 means we're also going to have to support technology  
16 for whatever else may come down the line.

17 Let's see. I just keep going back to the  
18 point of do we need 4G in a field?

19 Also, it sounds like digital technology  
20 services like I think Mr. Maxson talked about -- oh,  
21 no, it was -- I'm sorry. It was the other side.  
22 What's that music service?

23 CHAIRMAN CLYMER: Pandora.

24 MS. QUINN: Pandora offers buffering, so

1 you don't lose your capability to listen to your  
2 song for that one-second gap, and I'm sure that many  
3 of the other technologies realize that you're going  
4 to go through a tunnel. You're going to have some  
5 kind of an interruption occasionally of a second or  
6 two, and they build into their technology delivery  
7 services that will keep the user from even noticing  
8 that blip, which makes it even less likely that that  
9 needs to be addressed at all now or in the future.

10 It's been four years since the applicant  
11 brought pretty much this same question before us,  
12 and I'm really stuck on the fact that they haven't  
13 found a less objectionable spot. It makes me wonder  
14 why that spot is so very special when it's at the  
15 bottom of a bowl and doesn't really do what they're  
16 saying they want to have done.

17 I think we can't consider the validity of  
18 any of this until you make sure that this technology  
19 is on all of the other existing things that it could  
20 possibly be on. If it's then on those things, and  
21 we still have all that yellow and white, then what's  
22 going to need to change is the bylaws because you  
23 can't put right now a cell tower in those places.  
24 And putting one in my neighborhood, that will just

1 get the edge of their neighborhood isn't going to  
2 solve your problem to begin with.

3 CHAIRMAN CLYMER: Has everyone from the  
4 public had a chance to speak that wants to speak?

5 Okay. Mr. Sousa.

6 MR. SOUSA: Mr. Chairman, if I could, just  
7 with respect to this plot, it is important, and I  
8 think the testimony from Mr. Goulet is such that  
9 this plot does show the propagation coming from that  
10 site (indicating). It does also show the propagation  
11 coming from this site (indicating); and so with  
12 respect to the comments from the abutter that just  
13 spoke, this is an actual drive test of the signal  
14 strength that's coming from those existing sites.

15 MS. QUINN: You never mentioned Great  
16 Hill. You mentioned Post Office Square, but you  
17 never mentioned Great Hill. Is it turned on or  
18 turned off or having 19 on it at all? It hasn't  
19 been mentioned.

20 MR. SOUSA: Fair enough. We can address  
21 it now if you'd like.

22 Mr. Goulet, if you could just address that  
23 briefly.

24 MR. GOULET: Just real quick, the coverage

1 that's represented on those plots, some of the sites  
2 that are contributing to that coverage are off the  
3 map.

4 So I don't want you to think that the  
5 coverage that you see there is just from the four  
6 sites shown. So there is LTE deployed at 1900 on  
7 all of those surrounding sites currently. It's not  
8 future. It's now today.

9 MS. QUINN: But for these maps, it was  
10 turned off and Post Office Square --

11 MR. GOULET: No, they're on. They're on.

12 CHAIRMAN CLYMER: It's been adjusted for  
13 that, but I think the -- I think you've responded to  
14 the one issue that that -- that Great Hill wasn't --

15 MR. GOULET: Right.

16 CHAIRMAN CLYMER: -- Great Hill wasn't  
17 mentioned because I don't think that was originally  
18 turned off at all. It was the other two that had  
19 the issues, and I think that's the reason why it was  
20 never brought up on whether it was on or off.

21 MR. GOULET: (Nods.)

22 MR. SOUSA: And with respect to whether or  
23 not you should rely on these propagation maps and  
24 the drive test data, I think it's accepted in the

1 federal courts, in particular the T-Mobile Central  
2 case, which is T-Mobile Central versus Unified  
3 Government of Wyandotte County. It specifically  
4 says that "boards rely on drive tests and propagation  
5 maps, in particular, because those methods are widely  
6 used throughout the wireless industry and are  
7 generally recognized as reliable and accurate."

8 That being said, we're not suggesting that  
9 either David or members of the public can't also  
10 submit additional evidence to you relative to their  
11 phone call use; however, as what we've learned  
12 tonight is that unlike when networks were first  
13 being developed where there was no coverage in a  
14 particular large area, and we needed to simply fill  
15 that gap, the nature of this significant gap is that  
16 it's fairly complex.

17 The analysis of both Mr. Maxson and  
18 Isotrope, the analysis of C Squared Systems shows  
19 that it's a fairly complex gap. It's not  
20 necessarily just serving 100, 300 people or 1,000  
21 people; instead, it's resolving a problem that is  
22 clearly identified on the drive test maps. It's  
23 clearly identified on Route 2, and the nature of that  
24 gap and Great Road is that it services a significant

1 number of traffic counts.

2 Above and beyond that there is the problem  
3 of Annursnac Hill and the fact that AT&T is utilizing  
4 that site to spill over coverage onto Route 2, and  
5 that's really not an efficient use of that spectrum.  
6 And we can anticipate that we're trying to build a  
7 network for the future, a reliable network for the  
8 future, and that's the reason really for this site.  
9 It's really the three reasons that Mr. Goulet gave.

10 Also looking to case law as an indicator  
11 of what a significant gap is -- and I think  
12 Mr. Maxson, while I think he's right in stating that  
13 it's not his role to determine whether or not  
14 there's a significant gap or not. It's your role as  
15 the Planning Board to look at all the probative  
16 evidence and determine yourself as to whether or not  
17 there's a significant gap. The courts most recently  
18 in 20 -- February of 2014, a Cingular case against  
19 the City of Manchester, the Court specifically said  
20 that in finding that a significant gap exists, the  
21 Court has considered factors such as the physical size  
22 of the gap. And here we can look at the different  
23 areas on Route 2. There's a fairly clear area of  
24 probably about a quarter mile; the number of users

1 the gap effects. As far as residents go, it's a  
2 fairly small number. As far as traffic count goes,  
3 it's a significantly high number, and that was 2009  
4 data. So we're talking a lot of users that are  
5 affected; the percentage of unsuccessful calls or  
6 inadequate service during calls in the gap area.  
7 That's another factor; the need for coverage around  
8 a heavily traveled and important route. Clearly  
9 Route 2A and Route 2 are clearly very important  
10 routes, not only to Acton, but to the whole area;  
11 and the carrier's standard for reliable service.  
12 And that's really what we're trying to fix here.

13 We feel that there's a problem now, and we  
14 feel the problem's going to get even worse if we  
15 don't fix it. Annursnac Hill is simply not  
16 performing well, and it's not going to be able to  
17 keep up with our customer needs. And it's not going  
18 to be able to keep up with providing reliable  
19 service to the AT&T customers, and so that's why  
20 we're proposing a site in a limited industrial area.  
21 We're proposing a site at the much lower height than  
22 what we're potentially permitted to propose. Two  
23 years ago the application was for 170 feet. We are  
24 proposing a site that's significantly smaller, in a

1 limited industrial zone, in an effort to fix these  
2 problems. We're also proposing a number of designs  
3 that we've presented to the board, one of which is a  
4 CAM. We're willing to install a CAM where the  
5 antennas are going to be entirely concealed in a  
6 flagpole design. We've also suggested that we think  
7 the better design would be a monopine to deal with  
8 some of the aesthetic concerns. In addition to  
9 that, a monopine would be able to accommodate full  
10 arrays from these wireless carriers, and therefore  
11 more antennas and therefore more carriers on one  
12 structure.

13 And so we think we've done a responsible  
14 application in an effort to fix these significant  
15 gap problems.

16 And so I would suggest to the board that  
17 this is a complex issue, and I think you have a lot  
18 of data points, but please consider the case law  
19 which suggests that you have to take into  
20 consideration all of these factors, not just is this  
21 going to fix the problem for enough people in Acton.  
22 It's going to fix the problem for a lot of people,  
23 some of them happen to be on Route 2 and Route 2A.

24 And what I'd like to do also because I

1 think once we finish the conversation with  
2 significant gap -- and I'm not suggesting that the  
3 board can't ask any more questions, I think it is  
4 also important to turn to the next analysis, which  
5 is alternative site analysis. And Mr. McGovern,  
6 Steve McGovern, from Airosmith has submitted some  
7 testimony regarding alternative sites. That was  
8 part of the original application, but there's also  
9 been suggestion in Mr. Maxson's report to  
10 essentially go west, look west, and we clearly have  
11 done our homework with respect to looking west and  
12 seeing whether or not any of those sites could  
13 essentially serve the same purpose and fix the same  
14 problems.

15 And so what I'd like to do is have  
16 Mr. McGovern come back up, refresh the board's  
17 memory and update the board on his efforts with  
18 respect to those sites that many of which are state  
19 owned property, but there are also some privately  
20 owned property as to our efforts in trying to move  
21 the site further west.

22 CHAIRMAN CLYMER: Before we do that, I  
23 think we asked this question before, but it was  
24 before all the reports and --

1 MR. SOUSA: Sure.

2 CHAIRMAN CLYMER: -- before it was clear  
3 that the maps were limited to the 1950 band. How  
4 much of the difference between what AT&T customer  
5 map shows and what these models show is due to the  
6 fact that this has been limited to a single band and  
7 not all of AT&T's network.

8 And if you want -- Mr. Goulet just left.  
9 He knew I was going to ask that question.

10 MR. SOUSA: You're referring to the  
11 marketing maps; right?

12 CHAIRMAN CLYMER: That's correct.

13 MR. SOUSA: Okay. And whether or not the  
14 marketing maps are showing just one spectrum or if  
15 they're showing usage on all spectrums?

16 CHAIRMAN CLYMER: I'm pretty sure they're  
17 showing the whole spectrum. It wouldn't make any  
18 sense to have a marketing map that didn't show the  
19 whole spectrum.

20 MR. SOUSA: Yeah.

21 CHAIRMAN CLYMER: So I'd just like to  
22 understand is that the significant difference  
23 between the marketing map and these propagation  
24 maps? Because I think that would be interesting

1 because we know that there -- we know that, you  
2 know, Dave has asked for that information reflecting  
3 all of the bands, and we got a, you know, what I  
4 would say is I'm still not -- and we'll bring this  
5 up later --

6 MR. SOUSA: Sure.

7 CHAIRMAN CLYMER: -- I'm still not totally  
8 clear why that is not appropriate for our analysis,  
9 but I just would like to know if that's the major  
10 factor that causes the difference. I think it would  
11 be an important factor for us to at least know.

12 MR. SOUSA: Yeah, I think it would be best  
13 to defer to Mr. Goulet on that since it is a  
14 technical question. I'm not sure how they develop  
15 those marketing maps.

16 That being said, you can take the  
17 marketing maps into consideration, but what I would  
18 suggest to you is that the courts have seen that a  
19 drive test is the more accurate representation as to  
20 what coverage we have and what coverage we don't  
21 have.

22 CHAIRMAN CLYMER: Uh-huh.

23 MR. SOUSA: And I'm not speaking for  
24 Mr. Maxson, but he also suggested that the drive

1 test data that C Squared provided is pretty  
2 consistent with his analysis as to what the existing  
3 footprint is in this area.

4 CHAIRMAN CLYMER: Agreed. At that same  
5 frequency.

6 MR. SOUSA: Right.

7 CHAIRMAN CLYMER: And so, I do -- oh, he's  
8 back.

9 MR. SOUSA: So, Dan, we have a question,  
10 and the Chairman's going to restate it for you.

11 I apologize, Mr. Clymer. If you can  
12 restate it --

13 CHAIRMAN CLYMER: No, that's all right.

14 MR. SOUSA: -- and we'll try to address it  
15 accordingly.

16 CHAIRMAN CLYMER: So we were trying to  
17 reconcile the marketing maps with the propagation  
18 maps, and I realize the marketing maps were probably  
19 done very differently; but my real question is how  
20 much of that is due to the fact that there are other  
21 frequencies in the network that aren't being  
22 considered when you look at these propagation maps.  
23 Is that one of the major differences between the  
24 two -- the two maps?

1 MR. GOULET: To answer your question, I'm  
2 afraid I have to ask you if the map that you presented  
3 was it specifically 4G?

4 MS. QUINN: Yes.

5 MR. GOULET: It was. Okay.

6 MS. QUINN: Printed today.

7 MR. GOULET: Pardon.

8 MS. QUINN: Printed today.

9 MR. YACOUBY: Was that 4G or is that a  
10 general map?

11 MS. QUINN: No, it's 4G. It shows best  
12 quality for the entire area.

13 MR. GOULET: Do you have the map?

14 CHAIRMAN CLYMER: Do you want to pass that  
15 to Mr. Goulet.

16 MS. QUINN: Yes. I submitted it.

17 MR. GOULET: Well, it says right on the  
18 map "This coverage viewer provides a high-level  
19 approximation of wireless coverage. There are gaps  
20 in coverage that are not shown by this high-level  
21 approximation. Actual coverage may differ from map  
22 graphics and may be affected by terrain, weather,  
23 foliage," et cetera.

24 MR. YACOUBY: It's a marketing map. It's

1 a legal disclaimer.

2 MR. GOULET: I'm sorry. And I don't mean  
3 any offense to my customer certainly, but being in  
4 the industry, I remember how the marketing maps  
5 work.

6 MR. YACOUBY: Right.

7 MR. GOULET: I would give them that  
8 (indicating), and go back -- well, if you went to  
9 the two color or the one color. I'd give them that,  
10 and then they'd take a big magic marker and go  
11 (indicating) around the whole thing and say this is  
12 our coverage.

13 MS. QUINN: So someone at AT&T is lying?

14 MR. GOULET: It's marketing.

15 MR. YACOUBY: With all due respect, I  
16 think we have to understand what a marketing map is  
17 and just read that. That's also a legal disclaimer.  
18 It's not worth the paper it's written on for our  
19 consideration.

20 CHAIRMAN CLYMER: Yeah. No, I think it  
21 was useful to just hear what Mr. Goulet said.

22 MR. GOULET: No. I mean, obviously AT&T  
23 does not design their network based on the marketing  
24 maps. They design their network based on

1 information that we've presented here. Marketing  
2 maps are general. They do them for huge areas.

3 If there was a huge -- a solid area, and I  
4 mean a large area that did not have coverage, they  
5 would not show it on their marketing map, but they  
6 take something like this, and those white --

7 MS. QUINN: That's just our area.

8 MR. GOULET: Pardon.

9 MS. QUINN: That's just School Street.  
10 That's not a whole big map.

11 MR. GOULET: Right. But what I'm trying  
12 to get at is if that whole thing was white --

13 MS. QUINN: It's really zoomed in, and  
14 they really said it's perfect 4G.

15 MR. GOULET: I didn't read that in this  
16 where it says it's perfect 4G.

17 MS. QUINN: It's the red color, which says  
18 best quality --

19 MR. YACOUBY: It's getting late.

20 MS. QUINN: -- for our entire area, and it  
21 says AT&T.

22 MR. GOULET: It says "coverage by device  
23 type." 4G LTE is exactly what it says, and then it  
24 says "This map shows an approximation of wireless

1 data coverage in the US, Puerto Rico, and the US  
2 Virgin Islands."

3 MS. QUINN: So AT&T lies.

4 MR. GOULET: No, it -- I'm trying to get  
5 to where you're saying that this shows -- it says  
6 "perfect coverage." And I'm not trying to be  
7 argumentative, I'm just saying that --

8 MS. QUINN: It says best quality.

9 MR. GOULET: -- it's a marketing map, and  
10 it says an approximation.

11 MS. QUINN: So it says AT&T lies?

12 MR. GOULET: So that -- I think that's as  
13 much as I can say about that.

14 MR. MAGLOTHIN: I just have a real quick  
15 technical point.

16 CHAIRMAN CLYMER: That's fine. I'd  
17 actually -- why don't you go, and I want to ask you  
18 one more question before I close it down.

19 MR. MAGLOTHIN: So just real fast, I  
20 presented evidence four years ago with my own  
21 propagation analysis.

22 CHAIRMAN CLYMER: Right.

23 MR. MAGLOTHIN: Different antennas,  
24 different frequency powers, so forth, but the

1 concept still remains, and I can -- I'd be happy to  
2 look into it. I'm with different employers who  
3 could look into maybe updating that. The yellow  
4 areas, the areas of the drive test that are of  
5 concern would not be covered by the proposed tower  
6 location period. Period.

7 The other aspect I would want to find out  
8 about is what's the big picture plan? We're dealing  
9 with one little tower, but we're talking about a big  
10 capability of 1900. So where are the other towers  
11 going to go? And how do they all play off each  
12 other, so that we're making sure if we're giving  
13 this capability to the community, we're truly giving  
14 the capability to the community, and we're not just  
15 over engineering something piece by piece by piece.

16 MR. YACOUBY: Unfortunately we can't  
17 control that. That's the reality. But we can't  
18 coordinate that or even control that because  
19 Verizon's coming in; AT&T is going to come in, and  
20 we have no legal standing. So wait a minute. We  
21 have a master plan, and we're going to tell the  
22 engineer where you can put it. That would be ideal,  
23 but unfortunately that's not within our purview or  
24 within our control.

1 MR. MAGLOTHIN: I understand. I served  
2 pro bono four years for the citizens. I'd be happy  
3 to do it again. Technically I can rebuke all day  
4 long anything that they would like to present.

5 CHAIRMAN CLYMER: Mr. Sousa.

6 MR. MAGLOTHIN: I'll give testimony too.  
7 Sorry.

8 CHAIRMAN CLYMER: Mr. Sousa, I'm conscious  
9 of the time.

10 MR. SOUSA: Yes.

11 CHAIRMAN CLYMER: And I'm conscious that  
12 there's still questions.

13 MR. SOUSA: Of course.

14 CHAIRMAN CLYMER: Are you amenable to  
15 extending this to --

16 MR. SOUSA: I am. I am. I would say, if  
17 I could, just with respect to that last point.  
18 Mr. Bourdon, you suggested with respect to interest  
19 rates, you know, why haven't we brought 4G LTE  
20 service like it can change interest rates? Unlike  
21 monetary policy where the Federal Reserve could  
22 potentially simply buy back bonds and affect  
23 interest rates, we can't do that with our network.  
24 We can't turn on 4G services everywhere overnight.

1 We simply can't do that. The nature of network  
2 building is that it's an incremental process. We  
3 have to go one step at a time, and this is one of  
4 the steps that we're taking.

5 MR. BOURDON: That brings up the following  
6 question is then when was it installed on Post  
7 Office Square?

8 MR. SOUSA: And so --

9 MR. BOURDON: And was it -- and it hasn't  
10 been turned on. So how long was it installed and  
11 waiting to be turned on, and it was on CNBC the  
12 other day, and Verizon's talking about AWS service,  
13 and that's their future. So then what happens is by  
14 looking at these, they're going to need another  
15 tower in between the two towers to cover their  
16 system, and then there will be another type of  
17 thing. As Ray has pointed out, incremental  
18 differences in systems and upgrades and --

19 MR. SOUSA: Right.

20 MR. BOURDON: -- for whatever reason, the  
21 board has to weigh, as Ms. Quinn, has pointed out  
22 how much are we going to be accommodating for that?  
23 And so my concern is that that might have been on  
24 there for a year or two on that tower and hasn't

1       been turned on yet because they haven't felt the  
2       need to turn it on.

3                   MR. SOUSA:    Yeah.

4                   MR. BOURDON:   And drive data says, oh,  
5       that's been turned on, and we find out it's not  
6       turned on.  So that's my kind of concern that we're  
7       building a tower to accommodate a service that's  
8       going to be built, and the tower's going to be  
9       built, and they're going to put it in there, but  
10      then they're going to decide.  We're not going to  
11      turn it on for two years, three years, four years,  
12      five years, or whatever, or we're going to turn it  
13      on tomorrow morning.

14                  MR. SOUSA:    Yep.

15                  MR. BOURDON:   And that's kind of where  
16      we're at.  You're saying build a tower, and if you  
17      wait so long, and you're not going to turn it on,  
18      what's the point in building a tower?

19                  MR. SOUSA:    So with respect to the Post  
20      Office Square site, that's an anomaly.  There are  
21      few instances that I have been involved in where a  
22      particular sector has not been turned on; however,  
23      the nature of that sector is that it doesn't fix the  
24      gap in coverage that we're talking about with

1 respect to this application, and I think both  
2 C Squared, and once again I should not speak for  
3 Isotrope, could most likely confirm that. That's a  
4 different coverage area.

5 With respect to this particular site, we  
6 think this is a responsible application, and that's  
7 your role is to figure out whether or not this is a  
8 responsible application to fix a significant gap in  
9 coverage.

10 And whether or not we've also ruled out  
11 alternative sites. I have to emphasize once again  
12 that this is in a limited industrial area. We are  
13 following the path of your bylaw with respect to  
14 height limitations, with respect to setbacks and  
15 fall zones, with respect to what zones we are  
16 actually going in.

17 I can't tell you, however, how we're going  
18 to fix a lot of the other problems that are in the  
19 residential area. That's the next frontier. The  
20 next frontier is really to provide ubiquitous  
21 coverage to all residences. It's going to be a  
22 significant challenge in almost every community, not  
23 only Acton, but in Hingham where I live --

24 MR. BOURDON: That's where I grew up.

1 MR. SOUSA: -- and every municipality.

2 MR. BOURDON: My family lives there so.

3 MR. SOUSA: What's that?

4 MR. BOURDON: I grew up there, and my  
5 family lives there.

6 MR. SOUSA: There you go.

7 MR. BOURDON: I spent a lot of time in  
8 that area as well.

9 MR. SOUSA: Yeah, it's a significant  
10 problem to provide coverage in the residential areas  
11 of any municipality, especially in Massachusetts  
12 where there are historic districts, where there are  
13 dense residential areas; but it's an incremental  
14 process.

15 You have to decide whether or not this  
16 particular application services a significant gap in  
17 coverage. Was it reasonable in the sense that was  
18 the design the best that we can get? Is it in the  
19 limited industrial versus a residential? There are  
20 a lot of factors that you have to consider, but  
21 unfortunately you can only do it one step at a time.

22 In addition to that, are we also building  
23 a structure that's going to accommodate future  
24 carriers? And so once we build that, and we turn it

1 on, which is our full intent, will we also be able  
2 to accommodate Verizon, Sprint, and T-Mobile, and  
3 other carriers? Are there any other new carriers  
4 that come into the marketplace.

5 Yes.

6 CHAIRMAN CLYMER: Can I just -- I think if  
7 we are going to extend this, let's -- would you like  
8 Mr. McGovern to speak so that we can --

9 MR. SOUSA: I would. I think it's  
10 important to address that specific issue, if you  
11 don't mind.

12 CHAIRMAN CLYMER: And, Derrick, I'm not  
13 trying to cut you off --

14 MR. CHIN: No.

15 CHAIRMAN CLYMER: -- but we'll have plenty  
16 of time for questions, but I just want to be  
17 sensitive to --

18 MR. SOUSA: Understood the time.

19 CHAIRMAN CLYMER: -- where we've still got  
20 more to go, and I think we're going to have to  
21 extend this, so the board can deliberate, so.

22 MR. SOUSA: So, Mr. McGovern has testified  
23 before. I'd like him to address his efforts in  
24 looking west of this site to see whether or not

1 those sites are available from a leasing standpoint  
2 because that's really the challenge, the significant  
3 challenge.

4 CHAIRMAN CLYMER: Okay.

5 MR. McGOVERN: Thank you, Rick.

6 Greetings. Steve McGovern, for the  
7 record.

8 As Attorney Sousa said, I have been  
9 contracted -- my company's been contracted, Airosmith  
10 Development to run an alternative analysis in the  
11 area, to do exactly what Ms. Quinn was hoping for  
12 in at least a portion of what you were stating to  
13 assure that what we have is a sound and stable  
14 position for this. I do this through zoning maps,  
15 through satellite imagery, through physically  
16 visiting the site in the vicinity; and, of course,  
17 through the tax maps to find where are places that  
18 will cover it, hopefully commercial areas, hopefully  
19 limited industrial areas, where specifically are we  
20 350 feet away from your residential zone, which is  
21 required by your zoning? Where we're hopefully out  
22 of as much open space as possible. As we know, this  
23 area is filled with open space, and it has been my  
24 task to find an area where this would be better than

1 here. That's specifically my function in this role.  
2 It's specifically what they hire me to do.

3 I submitted to the board back in June an  
4 affidavit. You guys had requested some more  
5 information. We submitted a supplement to that in  
6 December. That supplement specifically concerned  
7 the corner of Hosmer, the site owned by the state.  
8 We know at this time, as was confirmed to me, by  
9 them, has been subsequently confirmed to the board  
10 that the state is not currently interested in moving  
11 on that particular project. Quote, "It is not a  
12 priority for them." They gave no indication when it  
13 would be.

14 In addition, at the request --

15 MR. SOUSA: Did they ask you not to  
16 contact them?

17 MR. McGOVERN: I'm sorry.

18 MR. SOUSA: Did they ask you not to  
19 contact them?

20 MR. McGOVERN: They did, in fact, ask me  
21 not to contact them. They said don't call us.  
22 We'll call you. I have to abide by that.

23 In addition, we were asked again, gee,  
24 what if you push it west? What if you go there?

1 There's a car lot. There's a hotel. What happens?

2 As a portion of my original correspondence  
3 to the community, I reached out to that car lot.  
4 The car lot, in fact, replied and said they were not  
5 interested. That is a significant swath of land,  
6 granted it's downgrade. The topo doesn't  
7 exactly -- it's not exactly desirable. It doesn't  
8 benefit a project like this. It's about 20 feet  
9 drop from the height at the road at Route 2.

10 MR. SOUSA: Steve's, what's the address of  
11 that property?

12 MR. McGOVERN: I am not aware of the  
13 physical address of that property. I don't believe  
14 we addressed it in here, and the reason is because  
15 they said explicitly we're not interested. I'd be  
16 happy to provide another supplement, if necessary.

17 In addition, I've done some work with the  
18 owners of the Concordian Hotel, and we had some back  
19 and forth, some correspondence with them. They have  
20 come back to us and also said we are not interested  
21 in pursuing under these conditions, under these  
22 terms; and from that point of view, I -- again, I  
23 would need to respect the owner's not interested.

24 CHAIRMAN CLYMER: Can you explain what

1 those terms are.

2 MR. McGOVERN: Specifically monetary  
3 terms.

4 CHAIRMAN CLYMER: Okay. So basically you  
5 go out and say here's what we're willing to pay, and  
6 then if they're interested --

7 MR. McGOVERN: Here's what my client is  
8 willing to pay, specifically SBA in this case, and  
9 the terms are market, driven by the market. They  
10 vary from place to place. They certainly are -- in  
11 this area, they are consistent with what is being  
12 offered at the current location, within range  
13 certainly, and they are not interested in pursuing  
14 that.

15 CHAIRMAN CLYMER: So -- and maybe this is  
16 a question for Mr. Sousa, but how is that amount  
17 established? Is that amount established based on,  
18 you know, that there is an available property, and  
19 that available property you can get for "X" dollars.  
20 So then any other property, you have that same  
21 threshold for are you available at that price?

22 MR. SOUSA: So the answer is can we arrive  
23 at a lease agreement; and so the other party has to  
24 be interested in negotiating. And so with respect

1 to this particular property, Mr. McGovern has  
2 reached out to this particular landowner over a  
3 number of months, numerous times, perhaps more than  
4 20 times, trying to get their interest. Financial  
5 terms were proposed. They said we're really not  
6 interested in accordance with those terms. So  
7 Mr. McGovern then said, well, are there terms that  
8 you're interested in? Please give us a  
9 counterproposal. No such counterproposal was  
10 arrived at or even submitted.

11 So that's the problem is the nature of  
12 these sites is they become viable sites because they  
13 work from an RF propagation perspective. They also  
14 have to work from a zoning perspective, but the  
15 bottom line is you have to be able to lease the  
16 site, and not only lease the site for one year,  
17 lease the site for a long term. And so we have not  
18 been able to arrive at a lease arrangement with  
19 respect to that property.

20 So we'd consider that not a viable  
21 alternative.

22 CHAIRMAN CLYMER: Thank you. I'm sorry.  
23 I didn't mean to cut you off.

24 MR. MCGOVERN: It's quite all right.

1           Again, between the affidavit, the  
2           supplement thereto, further action has been  
3           attempted. It's certainly my opinion that this is,  
4           in fact, the best location for the site.

5           CHAIRMAN CLYMER: The best available  
6           location or the best location?

7           MR. McGOVERN: The best available location.  
8           That is correct. Yes.

9           CHAIRMAN CLYMER: All right. I don't know  
10          if you have any more.

11          MR. McGOVERN: If there's any questions I  
12          can answer, I'm happy to.

13          CHAIRMAN CLYMER: I think there's someone  
14          behind you that wants to ask a question.

15          MR. MAGLOTHIN: Just a quick point. I  
16          believe the Concordian Motel property actually  
17          belongs to the town. There's some kind of  
18          litigation or something that's been going on  
19          for -- at least this was the case four years ago.

20          MS. QUINN: They're in arrears, \$400,000.

21          MR. MAGLOTHIN: Yeah, they're indebted in  
22          taxes or there's some kind of issue.

23          MR. BOURDON: They owe back taxes to the  
24          town.

1 MR. MAGLOTHIN: Yeah, so that's probably  
2 why you got that response from them.

3 THE COURT REPORTER: Mr. Chairman, I can't  
4 take more than one person at a time.

5 CHAIRMAN CLYMER: Yeah, there's too many  
6 people talking. I apologize.

7 So if you want to talk, it's fine, but we  
8 need to control it.

9 MR. MAGLOTHIN: Certainly. So I just  
10 wanted to make sure we verify that because that then  
11 throws into question the thoroughness of the  
12 examination of the other properties. I myself also  
13 called these same properties plus probably four  
14 times that amount four years ago; and ultimately it  
15 came down doing my analysis is that again Craig  
16 Street just didn't do anything that wasn't already  
17 being accomplished. So that's what it boils down  
18 to. You put something on Craig Street, you get  
19 nothing for it, so.

20 CHAIRMAN CLYMER: So maybe -- oh, Dave.

21 MR. MAXSON: I'll try to be quick. Thank  
22 you.

23 CHAIRMAN CLYMER: Okay.

24 MR. MAXSON: I was going to comment

1 briefly on the marketing maps. And if you look at  
2 how these companies present that data, they have all  
3 the information about their cell sites in master  
4 databases. There are companies that make the  
5 software to make that happen. So they're using the  
6 same or similar propagation models to produce those  
7 maps. But what you see is what I would call a  
8 smearing technique, where instead of having all the  
9 modelled look that you see of these here, things are  
10 smoothed out. It's a smoothing function, and that's  
11 a very common thing to do.

12 The second thing is I did do an assessment  
13 a couple of years ago of a T-Mobile marketing map  
14 and found a correlation between certain signal  
15 strengths and what their thresholds for best and  
16 good and fair were. And those thresholds -- and  
17 this is for T-Mobile. I'm not saying it's for  
18 AT&T -- those thresholds did not -- were not  
19 consistent with the thresholds that they were using  
20 on the engineering models.

21 MR. YACOUBY: Right.

22 MR. MAXSON: The second thing I want to do  
23 is just a real quick question about Annursnac Hill,  
24 if I could, to the applicant; and that is that we've

1 heard discussion about LTE operating in two bands,  
2 700 megahertz and 1900 megahertz and future expansion  
3 to higher bands, the 2100 and 2300 megahertz.

4 If those two higher bands were turned on  
5 at Annursnac Hill, would that relieve the capacity  
6 problem that's being experienced in that one sector?

7 MR. GOULET: You want me to answer?

8 MR. SOUSA: Do you want to respond?

9 MR. GOULET: Because of the propagation  
10 characteristics of those frequency bands, as I  
11 brought up earlier, if I were to run the prediction  
12 on those bands, they're not going to get anywhere  
13 near to Route 2 or Route 2A. So the answer to the  
14 question would be no.

15 CHAIRMAN CLYMER: Okay. I'd like to just  
16 touch on one more issue, and then maybe we could  
17 talk about when we could push this off.

18 MR. SOUSA: Sure.

19 CHAIRMAN CLYMER: And I'm sure I'm being  
20 dense on this point, but I'd like to understand a  
21 little bit more about this 800 band that we're not  
22 reflecting in the plot maps. I think you were  
23 talking about it's overutilized. It's -- it may not  
24 be available. I just want to understand because,

1 Dave, you brought up the issue of the full network,  
2 and I don't know if you can just comment on that, on  
3 whether -- on what we see when we look at the 1900  
4 is really appropriate for us to be looking at or  
5 should we be looking at a wider array of what the  
6 network would provide.

7 MR. MAXSON: Well, I think it is a brave  
8 new world here as we're seeing new ways of  
9 presenting need by the applicants. This is the  
10 first time I've seen a carrier really heavily focus  
11 on the 1900 megahertz band at the expense of  
12 considering the fact that that is a band that would  
13 be used as an overlay to the 800 or 700 megahertz  
14 bands, and that as I show in my comments of last  
15 week that that term overlay is quite meaningful, and  
16 the same is true when you go up to the AWS and WCS  
17 bands that they may have a slightly smaller footprint,  
18 but the idea is to capture whatever the density of  
19 the population is close to the tower with the really  
20 high frequencies and graduate your way out.

21 So as has been clear throughout this, I'm  
22 a bit skeptical that we are only being given  
23 information about 1900 megahertz; yet, what we're  
24 talking about is the provision of personal wireless

1 services, which with these wireless networks, it  
2 involves all of the bands that they're using. And  
3 so the question is can you make a significant gap  
4 assessment simply on the 1900 megahertz as the  
5 applicant is requesting; and I don't have an answer  
6 for that, but I think it's a challenging question.

7 CHAIRMAN CLYMER: And maybe I'm  
8 misinterpreting what Mr. Goulet had said earlier,  
9 but is it -- is there a reason why the other bands  
10 should not be considered? I thought I heard  
11 something about they're all used up. Is that a fair  
12 comment? Is that -- and if it is, I'd just like to  
13 get Mr. Maxson's view on that as well.

14 MR. GOULET: The 800 band that's currently  
15 in use for the 2G and 3G customers that are still  
16 out there. So they can't -- they can't put -- kick  
17 those customers off and get rid of all those devices  
18 that are out there and to force them to go to 4G.  
19 So they have to keep that 800 service there, and  
20 it's at capacity. They can't use those channels, if  
21 you will, for the LTE.

22 The 800 channels are very narrow, that  
23 type of service that AT&T is providing, and 4G is  
24 10 megahertz. It's the whole band.

1           The other thing I wanted to address was as  
2 far as the coverage gap, and I also wanted to  
3 explain why we did not do a pop. analysis. We  
4 always do a pop. analysis, but in this application,  
5 it didn't apply. Period. Because the whole  
6 idea -- and it says in your ordinance "In determining  
7 whether or not a particular carrier's coverage gap  
8 is significant, a relatively small or modest  
9 geographic area may be considered a significant gap  
10 if such geographic area is densely populated or is  
11 frequently used by a large number of persons for  
12 active, recreational, or similar purposes who are or  
13 are predicted to be remote users of compatible user  
14 services devices, and/or such geographic areas  
15 straddle one or more public highways or commuter  
16 rail lines regularly traveled or predicted to be  
17 traveled."

18           I mean that -- I'm not going to do a pop.  
19 analysis on with or without because, yes, we're  
20 covering some residents. We're going to improve  
21 coverage for other residents who are already  
22 covered, but they're going to have better service;  
23 but the idea is we need to cover all that commuter  
24 traffic that's on 2A, Route 2, Comm. Ave., and those

1 other areas, but if I did a pop., this is how many  
2 pops. are currently covered. This is how many pops.  
3 are going to be covered once we add the site. Well,  
4 that doesn't consider all the pops. that are already  
5 covered, but they don't have reliable service. Do  
6 you know what I'm saying? And it wasn't an issue of  
7 pops. It was an issue of those AADT traffic counts  
8 in those areas.

9 CHAIRMAN CLYMER: Yeah, and I think we  
10 wanted the population to understand that though. I  
11 mean --

12 MR. GOULET: Yes, but, I mean, your  
13 ordinance does address that. It says if there's  
14 commuter railways or major commuter corridors, and  
15 that certainly is what we're talking about here.

16 CHAIRMAN CLYMER: Right. I mean to the  
17 extent that we don't feel that they are properly  
18 covered today, that's not a blanket even if they had  
19 perfect coverage, at least my interpretation of the  
20 bylaw isn't that if you had perfect coverage on  
21 those roadways, that you would still have to put in  
22 the tower because there's a roadway there.

23 MR. GOULET: Correct. If you had adequate  
24 service, you wouldn't have to.

1           CHAIRMAN CLYMER: Right. So we're still  
2 trying to figure that out, because, again, I think,  
3 you know, we've seen the maps and all the things  
4 there; so I think that it was helpful to know what  
5 the population was, and Dave did address that, and  
6 then we understand the issue of Route 2.

7           MR. GOULET: And one other thing while I'm  
8 up here, I just want to clarify real quick. People  
9 have gotten up and said I drove in the yellow areas,  
10 and I drove in the white areas, and I had service on  
11 my phone. I never stood up here and told you that  
12 there was no service in those yellow or white areas.  
13 What I said was the green and blue areas are the  
14 reliable service areas.

15           And the people that did do their own drive  
16 tests, I think that's great, but I don't know  
17 which -- who they were on, whether they were on 850,  
18 whether they were on 1900, 2G, 3G, or 4G.

19           So but I don't want to imply that we're  
20 saying that the yellow and red is no service.

21           CHAIRMAN CLYMER: Right. And I don't  
22 think the Planning Board has decided yet whether  
23 someone who can get service through 850 or whatever  
24 has a gap in coverage; so I think that's an open

1 issue for the Planning Board.

2 MR. YACOUBY: Can I have one clarification  
3 of a question asked.

4 CHAIRMAN CLYMER: Yes.

5 MR. YACOUBY: Am I to interpret correctly  
6 though that the 800 megahertz is being used for 3G  
7 and 2G?

8 MR. GOULET: Uh-huh.

9 MR. YACOUBY: Is that band -- is that  
10 spectrum going to be retired, say, if we fast  
11 forward ten years from now, because I think the real  
12 issue is building up infrastructure for wireless.  
13 That is absolutely everywhere.

14 MR. GOULET: Eventually --

15 MR. YACOUBY: So part of the question I'm  
16 trying to understand does that mean that that  
17 spectrum is no longer going to be used or retired  
18 when they go to newer technologies, or will it be  
19 kind of reused elsewhere in another way?

20 MR. GOULET: It's a good point, and you're  
21 right. It will stay in place as is, serving the  
22 technology platforms that it's serving now.

23 Two or three years from now, when those  
24 users have upgraded to 4G, they will then utilize

1 that 800 band at that time sometime in the future,  
2 and they'll restructure it for LTE.

3 MR. YACOUBY: Okay. Thank you.

4 CHAIRMAN CLYMER: So here's what I'd like  
5 to do. We've got two people standing up. I'd like  
6 to agree upon a date to continue this, and then  
7 we'll hear from the two people standing, and then we  
8 will adjourn for today.

9 MR. SOUSA: Of course. It's your  
10 pleasure, Mr. Chairman. You select a date.

11 CHAIRMAN CLYMER: Well, I hate to select  
12 April Fool's Day.

13 MR. SOUSA: I appreciate that.

14 CHAIRMAN CLYMER: April 1st is our next  
15 meeting. I guess, Kristen, we have a pretty light  
16 schedule. We just have that one. I suppose we  
17 could do that. We only have the groundwater bylaw;  
18 right?

19 Would that be okay for --

20 MR. SOUSA: April 1st?

21 CHAIRMAN CLYMER: Yes.

22 MR. SOUSA: Yes, that's fine for me. That  
23 would be great.

24 CHAIRMAN CLYMER: Can everyone attend on

1 the Planning Board on April 1st? Well, you have to  
2 because we have another public hearing. So I'm sure  
3 you'll all be here. Is that okay for everyone?

4 MR. CHIN: Is that Town Meeting?

5 CHAIRMAN CLYMER: No. Town Meeting is  
6 April 7th, so.

7 All right. If that's --

8 MR. SOUSA: At 8:00 p.m.

9 CHAIRMAN CLYMER: Oh, no. What time is  
10 the --

11 MS. GUICHARD: The public hearing, I  
12 think, is starting at 7:30. The groundwater  
13 protection overlay district, but can we also extend  
14 a decision?

15 CHAIRMAN CLYMER: Yes.

16 MR. SOUSA: Yes, beyond -- maybe two weeks  
17 beyond that date.

18 CHAIRMAN CLYMER: Well, how long does the  
19 transcript take because I think that's what we want  
20 to make sure we have the transcript in hand.

21 MR. SOUSA: I understand.

22 THE COURT REPORTER: It usually takes  
23 about ten business days.

24 CHAIRMAN CLYMER: Okay. So I think we

1 probably need more than just two weeks. I think we  
2 need -- Kristen, what do you think, given that you  
3 have to do all the work? I shouldn't be the one  
4 that suggests that.

5 MS. GUICHARD: Can we say May 1st? Or is  
6 that -- I'm not sure if that's --

7 CHAIRMAN CLYMER: Well, you'll get that  
8 about April 15th.

9 MR. SOUSA: So can we do the 25th?

10 MS. GUICHARD: Well, that's -- so we'd be  
11 getting it on the 15th.

12 MR. SOUSA: How about the end of the  
13 month? April 30th? Would that be reasonable?

14 CHAIRMAN CLYMER: Will April 30th be okay?  
15 I just wanted to be sure what we asked for.

16 MS. GUICHARD: Okay. That would be great.  
17 Thank you.

18 MR. SOUSA: Okay. I'll prepare a letter  
19 tomorrow morning, and I'll send it to the board.

20 CHAIRMAN CLYMER: All right.

21 MS. GUICHARD: We actually have it.

22 MR. SOUSA: Oh, you have one of those.

23 Perfect.

24 CHAIRMAN CLYMER: And so if you guys would

1 like to come to the mike, so we can.

2 MS. QUINN: I just clarified with  
3 Mr. Maxson. This is the current map, okay, and this  
4 is the site. This is with 1900 turned off at --

5 MR. MAXSON: Post Office Square.

6 MS. QUINN: -- at Post Office Square.

7 CHAIRMAN CLYMER: Right.

8 MS. QUINN: Okay. So we're here  
9 (indicating). What colors do we see around there  
10 already? Best quality, blue and green. And which  
11 map shows what we would get?

12 Just at 19, not considering anything else,  
13 but that's why their marketing map does match what  
14 they're telling us. Everything in that area is best  
15 quality.

16 MR. GOULET: This is what you would end up  
17 with.

18 MS. QUINN: I don't see a substantive  
19 difference. I mean it's green and orange now, but  
20 it's not wider. It doesn't go into the other  
21 neighborhoods that are -- that one doesn't help me  
22 at all.

23 MR. GOULET: Well, that difference is that  
24 now that area's being served by the new site instead

1 of the people being served by Annursnac Hill.

2 MS. QUINN: But if we turned on the other  
3 frequencies, would that make a difference, the other  
4 ones that you've bought, 21, 23? They're on?

5 CHAIRMAN CLYMER: I think that map is with  
6 them all on; correct?

7 MR. GOULET: Correct.

8 MR. SOUSA: Dan, use the mike.

9 MR. GOULET: Out of all the frequencies,  
10 that's the best. That's the best. The 2300, the  
11 2100, the 1900, we're showing you the frequency that  
12 has the largest footprint.

13 MS. QUINN: Okay. But that's already all  
14 covered. You're just showing the same stuff covered  
15 where the new tower is, and it's brown. It's not  
16 reaching out to Route 2A like the applicant says  
17 they need coverage on, the Great Road. It's not  
18 reaching out there. You're still just covering not  
19 even a tiny section of Route 2, which was already  
20 green and blue. You're covering fields. You're  
21 covering the Christofferson Well and the sandpits  
22 with 4G. I'm just pointing out.

23 MS. CLARK: Hello. Meaghan here again.

24 I am curious whether AT&T could provide us

1 with some more substantial data about the supposed  
2 gap on Route 2. Have we requested some sort of, you  
3 know, data about the number of dropped calls or some  
4 customer feedback? The user experience side of  
5 things for Route 2 might be helpful. I don't know  
6 if AT&T can provide that kind of information, but  
7 that's definitely a question on my mind, so.

8 And also I'm assuming AT&T has invested a  
9 lot of time and energy with SBA Towers, and I'm  
10 wondering, you know, as a researcher, I'm thinking  
11 about benchmarking and how we compare different  
12 sites that have recently gone up to this one. I  
13 don't know if maybe perhaps the board has already  
14 done this, but supposed significant gaps elsewhere,  
15 what do they look like as of recent days? And  
16 perhaps that's something we could work with the  
17 applicant on or perhaps that's something you've  
18 already investigated yourselves but just some  
19 observations and thoughts.

20 Thank you.

21 CHAIRMAN CLYMER: I think we're going  
22 to -- well, I'll take a motion to adjourn.

23 MR. BOURDON: Well, you have a motion to  
24 continue the public hearing.

1 CHAIRMAN CLYMER: You want a second?

2 MR. BOURDON: Motion to continue the  
3 public hearing to --

4 CHAIRMAN CLYMER: To we said -- you  
5 want --

6 MR. SOUSA: April 1st.

7 CHAIRMAN CLYMER: -- to do it April 1st at  
8 8:00.

9 MR. BOURDON: At 8:00 in this room.

10 CHAIRMAN CLYMER: Do you think 8:00 is --

11 MS. GUICHARD: If we start the other  
12 public hearing at 7:30, I think that's okay. I mean  
13 you don't have to necessarily start at 8:00. We  
14 can't start before.

15 CHAIRMAN CLYMER: Let's say 8:00. I was  
16 thinking that the other one may take a little bit  
17 more than a half hour --

18 MS. GUICHARD: Yeah, it may.

19 CHAIRMAN CLYMER: -- but it shouldn't be  
20 much more than 45 minutes. So why don't we say  
21 8:00, so that if we can get the first one done in a  
22 half hour, we can start early, so. Continue with  
23 your motion.

24 MR. BOURDON: So motion to continue the

public hearing to April 1st at 8:00 in this room.

MR. DUBE: Second.

CHAIRMAN CLYMER: All in favor.

Now I'll entertain a motion to --

MR. BOURDON: And motion to adjourn.

MR. BUKOWSKI: Second.

CHAIRMAN CLYMER: All in favor.

Thanks, everyone.

MR. SOUSA: Thank you members of the  
Board.

(Hearing concluded at 10:57 p.m.)

C E R T I F I C A T E

I, Julie Thomson Riley, Registered Diplomate Reporter and Certified Realtime Reporter, do hereby certify that the foregoing transcript is a true and accurate transcription of my stenographic notes on Tuesday, March 18, 2014, to the best of my knowledge, skill, and ability.

Julie Thomson Riley, RDR, CRR