## Chicago Infrastructure Trust Meeting - February 7, 2017

1	CHICAGO INFRASTRUCTURE TRUST
2	BOARD OF DIRECTORS MEETING
3	
4	BEFORE:
5	CHAIRMAN KURT SUMMERS
6	MS. LESLIE M. DARLING MR. GEORGE MARQUISOS
7	MR. CARL LINGENFELTER MR. DAMON SILVERS
8	MR. MIGUEL ZARATE MR. MICHAEL SCOTT, JR.
9	MR. MATT O'SHEA MS. DEBRA A. CAFARO
10	MS. MARY SUE BARRETT MR. RALPH AFFRUNTI
11	MS. KYM HUBBARD MR. R. SCOTT FALK
12	MR. TOM BUDESCU
13	The meeting of the Chicago Infrastructure
14	Trust, before the Chicago Infrastructure Trust
15	Board of Directors, taken before Julie Walsh,
16	CSR, and notary public of Lake County, Illinois,
17	on the 19th day of July, 2016, at the
18	Metropolitan Planning Council, 140 South Dearborn
19	Street, Suite 1400, Chicago, Illinois, beginning
20	at approximately 10:08 a.m., pursuant to notice.
21	
22	REPORTED BY: JULIE WALSH, CSR
23	LICENSE NO: 084-004032
24	

## Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 (Whereupon the meeting
- 2 commenced at 10:04 a.m.)
- 3 CHAIRMAN SUMMERS: All right. So it's
- 4 10:04. We'll call this meeting to order. We
- 5 don't need to take a roll because you've got it
- 6 covered, right, who is here and who's not. Okay.
- 7 Great.
- 8 So we'll start with the approval of
- 9 the minutes from the October 18th meeting.
- 10 Presuming everyone has reviewed them, there are
- 11 no questions; I actually entertain a motion to
- 12 approve.
- 13 MR. O'SHEA: Motion.
- 14 MS. CAFARO: Second.
- 15 CHAIRMAN SUMMERS: Motion by Alderman
- 16 O'Shea. Second by Miss Cafaro. All in favor.
- 17 (Chorus of ayes.)
- 18 CHAIRMAN SUMMERS: Any opposed?
- 19 (No response.)
- 20 CHAIRMAN SUMMERS: Hearing none that matter
- 21 passes. Now, the board calendar.
- 22 MS. DARLING: So these are -- remain our
- 23 tentative board meeting dates for the rest of
- 24 calendar year 2017. If there will be no changes,

- 1 then we will expect to meet on Tuesday, June 6th,
- 2 at the same time, 10:00 to noon. Tuesday,
- 3 September 12th and Wednesday, December 6th.
- 4 As always we are very appreciative to
- 5 our wonderful hosts here at the Metropolitan
- 6 Planning Commission and Mary Sue Barrett. So we
- 7 really appreciate your endless hospitality and we
- 8 really appreciate you allowing us to hold our
- 9 meetings here, Mary Sue.
- 10 With that I would like to go into a
- 11 brief organizational matter update, an operations
- 12 update. First of all, you probably notice by the
- 13 fact that Scott doesn't have his placard that
- 14 there is a few things amiss today. Typically
- 15 Patty Dominguez is here. She unfortunately has
- 16 had a very sad death in her family. And so I
- 17 know that all of you will keep a special thought
- 18 for her and her family today. So she will be
- 19 probably back with us next week, but it's a rough
- 20 time for her family so keep a special thought.
- 21 Thank you.
- 22 It's been an extremely busy time at
- 23 the CIT over the last few months. And so first I
- 24 want to take a second to express my appreciation

- 1 to our terrific staff. I really cannot be more
- 2 proud of the work the team has done over the past
- 3 few months on our projects, specifically on Smart
- 4 Lighting that we are going to talk about in more
- 5 detail today.
- A great deal has been asked of them
- 7 and they have delivered every single time. So I
- 8 hope that as you hear more today, you'll share in
- 9 that thought. And there's been a lot of late
- 10 nights, a lot of very diligent work. And so I
- 11 want to really give a special thank you to Tom
- 12 and to George and Patty and everyone on the team
- 13 including some of our new -- our new team who I
- 14 will introduce in a minute.
- 15 Also, thank you to you, the board, and
- 16 our advisory board. Your advice and assistance
- 17 through this process has been invaluable.
- 18 So moving on to the staffing update.
- 19 Our current status is we still have the same four
- 20 full-time employees that you saw last time. We
- 21 also have a few new part-time employees. We have
- 22 a couple of new interns. We have an associate
- 23 and a fellow. So I'll look forward to
- 24 introducing you to our new -- our new part of the

- 1 team.
- 2 And regarding health benefits, you
- 3 voted at the last board meeting for us to move
- 4 forward and be able to offer a suite of benefits
- 5 to our employees in order to keep the CIT
- 6 competitive and continue to attract this talent.
- 7 I am proud to let you know that on
- 8 January 1st we were able to get these benefits up
- 9 and running for calendar year 2017, and now have
- 10 a good benefits program to offer to our
- 11 employees. And so I appreciate your support in
- 12 that.
- We are lucky enough that Scott Falk
- 14 and the team at Kirkland have been providing
- 15 continued pro bono assistance to the Chicago
- 16 Infrastructure Trust since its inception and
- 17 continue to do so. And I am very grateful for
- 18 that assistance.
- 19 We have kicked off that employee
- 20 manual process that I've talked to you about.
- 21 And the manual that we have done some redrafting
- 22 on is now in the hands of Scott's partners at
- 23 Kirkland, and they are very diligently helping us
- 24 get through that. And I will look forward to

- 1 bringing that to you at our next board meeting
- 2 for presentation and approval.
- Also, we are working with our auditors
- 4 from Prado & Renteria. Hilda Renteria has been
- 5 very helpful in getting our audits scheduled for
- 6 2016. I should be able to bring the results of
- 7 that to you in the next board meeting as well.
- 8 Moving on to the recommendation of the
- 9 2017 budget. We continue to prudently manage our
- 10 expenses. We have continued to focus on
- 11 providing great value to the City of Chicago and
- 12 sister agencies. And we are -- you've all had an
- 13 opportunity to review the budget and to ask
- 14 questions about it.
- 15 And so I am requesting your approval
- 16 for that budget today. This is the fiscal year
- 17 2016 unaudited actuals. This is something that
- 18 you've all seen both in your board packet and
- 19 prior to this meeting and had a chance to take a
- 20 look at it.
- 21 As you can see we are operating under
- 22 budget. And I feel like we have continued to
- 23 provide outstanding value to the City at a
- 24 relatively economical rate to -- for the services

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 that we are providing. As you know, we have done
- 2 a complete procurement process including
- 3 financial analysis, feasibility analysis. And we
- 4 think that if the City had gone and procured that
- 5 outside, it would be considerably more expensive.
- 6 So moving on to the 2017 budget versus
- 7 the 2016 actuals. We have budgeted to our grant
- 8 amount. And so we are hoping to do some more
- 9 hires. You'll see the increases is primarily in
- 10 labor cost. And we are hoping as our project in
- 11 pipeline expands, we will need some additional
- 12 team members and hope to add those in the coming
- 13 year.
- 14 I'm happy to entertain any questions,
- 15 but ask and recommend that you approve the
- 16 budget.
- 17 MS. HUBBARD: Just one. How many more years
- 18 will that grant be available to us? The one that
- 19 you -- is this the last year?
- 20 MS. DARLING: No, you know, that's something
- 21 that is negotiated each year.
- 22 MS. HUBBARD: Okay.
- 23 MS. DARLING: As part of the Home Buyer's
- 24 Assistance Program, you know, if -- if the

- 1 program exceeds the amount in that grant -- in
- 2 our grant, then we would share that amount 50/50.
- 3 MS. HUBBARD: Okay.
- 4 MS. DARLING: So, you know, we are obviously
- 5 moving towards more self-sufficiency and also a
- 6 more fee for service model, but we will be
- 7 looking at that in 2017.
- 8 CHAIRMAN SUMMERS: I think it's an
- 9 appropriate question because it's going to lead
- 10 in the pipeline of projects that we look at as a
- 11 board and that the staff looks at through 2017
- 12 with an eye toward opportunities that will
- 13 generate revenue so we can be self-sustaining.
- 14 And we certainly shouldn't treat this as a, you
- 15 know, evergreen investment. So I think that's
- 16 where Leslie is going and it's the right question
- 17 to ask.
- 18 MR. LINGENFELTER: I think it's also worth
- 19 noting though that with this amount of expense
- 20 we've generated, you know, 30 million in pipeline
- 21 for home mortgages and a 9 figure plus investment
- 22 in street lighting and city infrastructure. So
- 23 it's a pretty good return on the investment.
- 24 MR. SCOTT: But none of that provides fee

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 income to make the trust self-sustaining.
- 2 MR. LINGENFELTER: Correct.
- 3 CHAIRMAN SUMMERS: Well, the home mortgage
- 4 should, right, ultimately -- it's backed out of
- 5 this at some level. But, yeah, that's
- 6 directionally where we want to go.
- 7 Any other questions on the budget?
- 8 I'm happy to entertain a motion.
- 9 MS. CAFARO: I'll move it, Mr. Chairman.
- 10 CHAIRMAN SUMMERS: Moved by Miss Cafaro.
- 11 Seconded by Mr. Lingenfelter. All in favor?
- 12 (Chorus of ayes.)
- 13 CHAIRMAN SUMMERS: Any opposed?
- 14 (No response.)
- 15 CHAIRMAN SUMMERS: Motion passes.
- 16 Now, we're going to go through two
- 17 specific project updates and then kind of talk
- 18 about the pipeline. The biggest and most
- 19 anticipated obviously is Smart Lighting. So
- 20 let's dive in.
- 21 MS. DARLING: All right. So this is the big
- 22 story for today. We are excited to bring a
- 23 recommendation to you on Smart Lighting. We have
- 24 been working on this project for the whole time

- 1 you all have been on the board and I have been
- 2 here. It has taken up the great majority of our
- 3 time and efforts for more than a year now, but we
- 4 thought it might make sense to go back and as we
- 5 started and you all remember, Tom was on loan to
- 6 us through E & Y and with the CCA and helped put
- 7 together our strategic planning document.
- 8 And so we wanted to go back and sort
- 9 of talk about for a second about how this project
- 10 aligns with -- with both our strategic plan and
- 11 our value proposition. You know, you can see the
- 12 guiding principle is about providing
- 13 complementary services to meet the City's needs.
- 14 We have done that here. We've assisted the City
- 15 and expanded their capacity to provide this
- 16 project. Insuring value to the City and its
- 17 sister agencies and the taxpayers for the
- 18 delivery of this project.
- 19 We feel like we have checked that box
- 20 in spades. We, as you know, I just said for
- 21 budgetary purposes we feel like we have provided
- 22 tremendous value. We also think we are going to
- 23 be able to bring this project in where -- exactly
- 24 where we expected to be able to do that. And

- 1 also provide great value through the costs and
- 2 the proposals that we have seen for this project.
- And, also, number three, act as a
- 4 dedicated and specialized resource for
- 5 alternative project delivery. Again, I think
- 6 that this project is really absolutely a great
- 7 example of where we've been able to do that.
- 8 So we have provided all those
- 9 specialized resources, the subject matter
- 10 expertise. I can't tell you how much we all know
- 11 about street lighting now. And especially George
- 12 Marquisos who has become I think the world
- 13 renowned expert on it.
- 14 And so we have taken, again, idea
- 15 incubation; something that was thought about from
- 16 the City for a long time and we have turned that
- 17 project into reality. We've aggregated that
- 18 project and we have provided project management
- 19 for the project. So we think it really fits
- 20 within our strategic plan. It's been -- we hope
- 21 we have provided great benefits to the City.
- 22 So back in April 2016 when we met we
- 23 told you about the primary project goals;
- 24 converting approximately 85 percent of the City's

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 lighting fixtures to LED, implementing a lighting
- 2 management system or a control system for the
- 3 lights, a centralized system that would provide
- 4 realtime outage information to the City in
- 5 addition to possibly other services and provide
- 6 targeted infrastructure stabilization.
- 7 MS. HUBBARD: Leslie, can you go back a
- 8 little bit and refresh our memory on the 15
- 9 percent that isn't getting done what they -- what
- 10 kind of lights those are?
- 11 MS. DARLING: Sure, Kym. That's a great
- 12 question. So those are the ornamental lights.
- 13 So the lights that you see in the City and the
- 14 neighborhoods that are not the Cobra head or the
- 15 coach light lamps, so the ones that are more
- 16 decorative that are primarily in the central
- 17 business district.
- 18 You'll see a lot of kind of the
- 19 6-globe lamps around Wacker Drive for example and
- 20 other places in the City. So they're the 15
- 21 percent are pretty much ornamental. And those
- 22 have, you know, I think there's 26 or -- there's
- 23 some very high number of different lamp heads.
- 24 And I think at the time we didn't know

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 if that would be cost effective to change over
- 2 those lights. And so we were focussing on the
- 3 Cobra head lamps which is the most prevalent lamp
- 4 and fixture that we have.
- 5 CHAIRMAN SUMMERS: I think it also -- the 85
- 6 doesn't include some amount of conversion that
- 7 had already taken place in the City. For
- 8 example, you know, along Lake Shore Drive, other
- 9 places where you see LED conversions that exist
- 10 today.
- 11 MS. HUBBARD: Thank you.
- 12 MS. DARLING: So here we wanted to show you
- 13 a little bit about the timeline and how we have
- 14 gotten to where we are today. We set an
- 15 incredibly aggressive time schedule and we have
- 16 largely been able to achieve it. We are really
- 17 pleased with the outcome of the procurement
- 18 design.
- 19 There's been, as you know, incredible
- 20 interest in our process. And we set clear
- 21 expectations to the vendors and, you know, as you
- 22 can see when we issued the RFQ in April 2016 we
- 23 had 30 respondents.
- 24 Prior to that we did the RFI where we

- 1 added I believe 42 respondents. And so we
- 2 continue to whittle that down. We wanted to work
- 3 with -- with 9 shortlisted firms and engage in an
- 4 iterative process and refine that scope with
- 5 input from the shortlist of respondents. We
- 6 found that that worked incredibly well.
- We wanted to have a project that was
- 8 -- that worked for both the City, but also that
- 9 vendors could respond to in a meaningful way to
- 10 be able to accomplish the project.
- 11 And so the planning at the top of the
- 12 process that we did allowed us to move
- 13 expediently once the proposals were received on
- 14 January 9th of this year. And we expect that the
- 15 planning that we have done for this will result
- 16 in a similar process through a contract
- 17 negotiation. Again, we want to deliver value
- 18 through a timely and competitive process. And I
- 19 think we've accomplished that.
- 20 So now we want to get a little bit
- 21 more to the meat of what we think you are going
- 22 to have delivered through this process. We have
- 23 gone through all the proposals and we're
- 24 confident that the base scope of that project we

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 will be able to deliver on all of those goals.
- 2 So I want to turn it over to George
- 3 who will discuss a little bit about the lighting
- 4 conversion and the lighting specification and
- 5 talk a little bit more about the anticipated base
- 6 scope of the project.
- 7 MR. MARQUISOS: Okay. I will try to keep my
- 8 remarks fairly brief. But when this whole --
- 9 when this whole project started and we were given
- 10 the world is your oyster kind of idea, tell us
- 11 what we can do with the modernization that makes
- 12 sense for the City of Chicago. We know that we
- 13 have aging infrastructure and streetlights and
- 14 there is an opportunity because of advancements
- 15 in technology what is the best mix of ingredients
- 16 to kind of deliver a project that makes sense for
- 17 the City of Chicago.
- 18 A there was a lot of talk initially
- 19 about smart city and sensors and internet of
- 20 things and the world -- all kinds of things. And
- 21 so we really kind of dug down to see what's
- 22 really feasible at this stage recognizing there
- 23 is a lot of potential in the future.
- 24 And we pretty quickly came to a

- 1 project that had three critical elements from our
- 2 point of view. And I think we -- it's comprised
- 3 of these three.
- 4 So we said we need to save some energy
- 5 and so we chose the most cost effective or
- 6 economically justifiable conversions which
- 7 presented 92 percent of the inventory which are
- 8 Cobra heads.
- And so we said, well, let's convert
- 10 those to LED. That will save us a lot of
- 11 electricity. And then in addition to that let's
- 12 see if we can't use some of that savings to add
- 13 some technology that gives us the ability to
- 14 better deliver services to the citizens. So
- 15 realtime outage information as opposed to waiting
- 16 for citizens to call 311. That was a critical
- 17 priority.
- 18 No other city that I know of at the
- 19 scale of Chicago has gone down that technology
- 20 route in kind of having kind of automated ability
- 21 to monitor and control lighting. So we would be
- 22 somewhat of a ground breaker in that area.
- 23 And we also recognize that we didn't
- 24 have the money to replace everything that needed

- 1 replacing. But if we were prudent and if we had
- 2 better information the condition of our assets;
- 3 we could do targeted infrastructure repairs that
- 4 would extend the useful life of our existing
- 5 infrastructure and kind of bring it in line with
- 6 the lifespan of the products that we are about to
- 7 install.
- 8 So this was I think a big vision and
- 9 we modeled it and we spoke to other
- 10 municipalities and we got as much information
- 11 from the private sector as we could. And we put
- 12 it into a financial model. We said I think this
- 13 could work. And but we needed private market
- 14 confirmation.
- 15 And so after this procurement process
- 16 I am pleased to report that we have it. So even
- 17 though we added quite a bit to the specifications
- 18 and we added -- asked for a lot of functionality
- 19 and a lot of capabilities that gave us some
- 20 flexibility into the future, we put a lot of
- 21 things into this procurement. And I think
- 22 largely because Chicago is such a large lighting
- 23 project, I think we got some very competitive
- 24 proposals. And we were able to achieve the vast

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 majority of what we promised which is very good
- 2 news from my perspective. I am sleeping much
- 3 better having this confirmation.
- I don't know what else to say about
- 5 that other than I'll give you a couple of
- 6 examples of how we knew that we were going to get
- 7 some economies of scale. We knew that we were
- 8 going to buy fixtures cheaper than perhaps
- 9 smaller municipalities or even the LED's that
- 10 we're purchasing today at a much smaller scale.
- 11 So we knew that our prices were going
- 12 to come down because of the quantity we're
- 13 buying. But I think rather than -- I think where
- 14 we leveraged -- rather than have cheaper
- 15 fixtures, we got better fixtures for the same
- 16 price. So by better fixtures I mean fixtures
- 17 that have the latest in dimmable drivers that
- 18 give you the ability to communicate two-way
- 19 fixture and get inventory information. So having
- 20 this realtime live inventory is an advancement
- 21 for Chicago.
- 22 Prior to 2013 Chicago didn't even know
- 23 how many street lights it had. It was just a
- 24 guess. And we added and we subtracted and there

- 1 was this whole back and forth with our utility
- 2 company as to what is the actual. And we
- 3 ultimately got an inventory. It's been
- 4 reconciled over time. And we are at a place now
- 5 where we think it's fairly accurate. But with
- 6 this new technology it will be accurate now and
- 7 every day into the future. Every time we change
- 8 a light, it will be recorded. And so we will
- 9 have really accurate information about our
- 10 infrastructure.
- In addition to that we are getting out
- 12 of this project a comprehensive condition
- 13 assessment. So we know where the lights are and
- 14 what wattage they are.
- 15 And we really didn't know what
- 16 condition the poles were in or what the wiring
- 17 was like. So we have a team going out here
- 18 across the City and within 300 days we are going
- 19 to get back a complete asset assessment. Like
- 20 we'll know which are the worst poles. And we'll
- 21 know which wiring is temporary and really should
- 22 be replaced. We'll know a lot of things that are
- 23 going to inform CDOT and allow them to make those
- 24 targeted prioritized investments in repairs.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 So those are things that I'm really
- 2 pleased to report that we can achieve. The
- 3 fixtures themselves are really high quality.
- 4 They have very high surge protection. They have
- 5 -- they're really high standards of water
- 6 impermeability. We expect them to last a long
- 7 time. They are incredibly rugged. We asked for
- 8 high quality fixtures and we got them for a price
- 9 that I think we can afford. So that's the good
- 10 news. And with that if there are any other
- 11 questions. Alderman.
- 12 MR. SCOTT: So you talked about the
- 13 conversion and, you know, we all know that we
- 14 have some that we had started to convert
- 15 currently. So how will the new improved light
- 16 fixtures, are they able to connect with the ones
- 17 that we are putting up now? So when we are doing
- 18 this asset assessment and, you know, one goes off
- 19 the grid that is not one of the new ones, are
- 20 they able to communicate so that we can still
- 21 repair those?
- 22 MR. MARQUISOS: That's a great question. So
- 23 there's been a lot of confusion because since
- 24 2015 every time -- and I want to correct the

- 1 terminology or at least clarify the terminology.
- 2 When we say conversion we mean take off the old
- 3 fixture, replace with an LED.
- What you're referring to that most of
- 5 the LED lights that citizens are seeing now are
- 6 replacements not conversions. So we're talking
- 7 about all new poles, all new wiring.
- 8 MR. SCOTT: Yes, yes.
- 9 MR. MARQUISOS: As part of a street redo.
- 10 MR. SCOTT: Yes.
- 11 MR. MARQUISOS: So Aldermen that take money
- 12 from their menu money and they say, I want this
- 13 whole street done. All new poles, all new
- 14 wiring. And when they put those new poles up,
- 15 they put up LED. Those LED lights that you see
- 16 up now are going to be somewhat different than
- 17 the lights that we're ultimately going to be
- 18 installing as part of the conversion process.
- 19 Now, how are they different? Well,
- 20 they don't have control nodules on them. The
- 21 good news is they have the ability to add control
- 22 nodules so they will be integrated into the
- 23 network. They are 4,000 Kelvin. So they are a
- 24 cooler, whiter light than the 3,000 Kelvin that

- 1 we are specifying for this. So the newer lights
- 2 will be slightly warmer. The distribution of the
- 3 lights will be more defined.
- 4 So we generally speaking there are
- 5 basically two types of lights that are being put
- 6 up now and they are largely confined to the new
- 7 light poles that are being put up. So that's a
- 8 defined context and it's very similar.
- 9 But Chicago has a wide variety of
- 10 contexts. We have poles on both sides of the
- 11 street, staggered, opposite, different heights,
- 12 different width streets. So we are trying to get
- 13 fixtures that are appropriate for each context.
- 14 So it will be a better defined light for the
- 15 particular context it is tasked to light. And
- 16 hopefully we reduce light trespass when we apply
- 17 the correct luminaire to the context that it's
- 18 designed. I don't know if that --
- 19 CHAIRMAN SUMMERS: Just one clarifying
- 20 question in response to the Alderman's question.
- 21 If an Alderman -- you know, this is largely a
- 22 conversion of the lights and a changing of the
- 23 poles where the infrastructure is most needed,
- 24 right?

- 1 MR. MARQUISOS: Yes.
- 2 CHAIRMAN SUMMERS: If an Alderman wanted to
- 3 continue to use -- if they had a major
- 4 thoroughfare that they were redeveloping and they
- 5 wanted to use menu money to also prioritize those
- 6 poles if the poles weren't on kind of the most
- 7 needed list for the infrastructure stabilization
- 8 repairs, correct me if I'm wrong; but they would
- 9 still be able to do so going forward and in
- 10 conjunction with the lighting conversion as well.
- 11 MR. SCOTT: And let me kind of touch on
- 12 that. I actually had a meeting about that. And
- 13 from what I was told, and I could be wrong; that
- 14 we can't do the poles and then someone else do
- 15 the heads. You have to do the entire portion
- 16 together. And this is just for selfish reasons.
- 17 So we can actually do this offline if necessary.
- 18 MR. MARQUISOS: No, I think the question is
- 19 a valid one. So the reality is Chicago has most
- 20 of its poles and wires were installed in the
- 21 1950s and '60s. They are -- they're steel. They
- 22 are still in many cases have some useful life
- 23 left, but the City needs to have a continual
- 24 process where they are replacing things. Like

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 they have to make a continual investment to
- 2 replace it. You can't just expect these things
- 3 to last forever.
- 4 This project is not designed to
- 5 replace. It is designed to kind of get
- 6 everything to a place that we increase the
- 7 reliability. So we're reducing failure rates.
- 8 We're getting better information on when things
- 9 fail and we're putting in more reliable
- 10 luminaires. That's its function. It's not a
- 11 replacement project.
- 12 And it's not designed to replace the
- 13 replacement project. That process still has to
- 14 go forward. Every year Aldermen are going to
- 15 have to make decisions about what needs to get
- 16 fully replaced.
- 17 CHAIRMAN SUMMERS: That still happens in
- 18 conjunction?
- 19 MR. MARQUISOS: In conjunction. And every
- 20 time you do a replacement, it will get pulled
- 21 into the new lighting management system and
- 22 you'll have realtime information about those new
- 23 fixtures.
- MR. SILVERS: I wanted to ask you about the

- 1 line about the City wide wireless network. Can
- 2 you explain that a bit further?
- 3 MR. MARQUISOS: Sure, it's a little
- 4 interesting. So we will have a dedicated
- 5 radiofrequency network that essentially is -- I
- 6 don't want to give -- I don't want to say too
- 7 much about it because we are still in the
- 8 procurement stage.
- 9 But essentially what you will see is
- 10 either at a circuit level or at a light level the
- 11 lights will be transmitting information about
- 12 their operations. And that will get communicated
- 13 wirelessly through radiofrequency to some kind of
- 14 a central access point that gets communicated to
- 15 a central point presumably somewhere in CDOT's
- 16 operations.
- 17 It gives them regular reports on
- 18 what's working and what's not. And then that
- 19 also allows COT to send messages to the lights.
- 20 I need you to dim. I need you to increase. I
- 21 need you to turn off or whatever it is. So there
- 22 is now the ability to remotely monitor and
- 23 control lights. And that's all done on a
- 24 dedicated system for street lighting.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 The beauty of that is it has the
- 2 capacity, should the opportunities become
- 3 economically justifiable in the future, to
- 4 transmit data for other uses. Right. So those
- 5 are the smarty city applications that today we
- 6 don't think make a ton of sense to invest in, but
- 7 we have pretty good confidence that in years to
- 8 come the City is going to want to jump in and get
- 9 more utility out of that network. So that's --
- 10 it's an investment that serves us now. And
- 11 hopefully will serve us in the future.
- 12 MR. SILVERS: And to that point could you
- 13 talk a bit about -- I mean, we've talked about
- 14 this before. But could you just explain a bit
- 15 about what those potential sort of add-on
- 16 technologies are that are enabled by the platform
- 17 for future smart city technologies. Like what
- 18 sorts of things does this set up the possibility
- 19 of being able -- for the City to be able to do
- 20 later?
- 21 MR. MARQUISOS: Well, we could have a whole
- 22 meeting on that.
- 23 MR. SILVERS: I'm not asking you to do that.
- MS. DARLING: I told you he's become the

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 world's leading expert.
- 2 MR. SILVERS: Yes. Well, it's quite -- it's
- 3 quite evident you've become the world's leading
- 4 expert already.
- 5 MR. MARQUISOS: No, I am very much a novice
- 6 in this. I am trying to understand what the --
- 7 but essentially everybody's espousing the
- 8 internet of things. So these devices have the
- 9 ability to now transmit information about what
- 10 they're doing or what they're seeing. So you
- 11 have the ability to apply sensors throughout the
- 12 City to tell you things like how dark is it? How
- 13 many people are traveling by? How many cars are
- 14 there? Are there parking spaces? Are there
- 15 potholes? Is the snow plowed?
- 16 You can get all kinds of information
- 17 about what's going on in the streets and then you
- 18 could respond to it. And that's basically it.
- 19 And so the question is -- and you can transmit
- 20 all kinds of other information. Air quality. It
- 21 goes on and on and on. The potentials are
- 22 virtually limitless. It's just a question of at
- 23 what cost and what's the return.
- 24 CHAIRMAN SUMMERS: Some of those that George

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 mentioned are sort of largely for a greater
- 2 public good and public use. And some of those
- 3 are purely commercially viable. And I think that
- 4 -- I think that the beauty of the approach that
- 5 the team has taken here is to maximize
- 6 flexibility and future adaptability. So that
- 7 when -- especially the commercially viable
- 8 options that have real revenue tied to them
- 9 become available, the City will be in a position
- 10 to potentially justify and make the further
- 11 investment, you know, to enhance the existing
- 12 network.
- 13 I think at the moment it's a lot of
- 14 great ideas that -- that don't have firm, you
- 15 know, revenue streams that make sense to invest
- 16 in today. But I think that can change, you know,
- 17 12 months from now or sooner.
- 18 MR. SILVERS: Mr. Chairman, I have been very
- 19 much supportive of this direction with that --
- 20 with your analysis in mind. I wanted to make
- 21 sure that the staff got on the record here what
- 22 the capabilities -- what the long-term
- 23 capabilities are.
- 24 I just had one further question which

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 is you've been describing mostly these
- 2 opportunities as ones that involve feeding data
- 3 back from the location into the system. It was
- 4 my understanding that there's also the
- 5 possibility of going the other way, right?
- 6 MR. MARQUISOS: Yes, it's two-way
- 7 communication.
- 8 MR. SILVERS: Right. So that, therefore,
- 9 it's a potential platform for distributing
- 10 broadband.
- 11 MR. MARQUISOS: Well, I want to pull back
- 12 that expectation. This is a low bandwidth. So
- 13 this is radiofrequency. We're not talking about
- 14 fiberoptic cables being installed here. Most of
- 15 these things are going to get -- and so the data
- 16 transmitted is relatively low, right.
- 17 MR. SILVERS: Right, so it's --
- 18 MR. MARQUISOS: You don't need a lot of data
- 19 to tell you whether the light is on or off. It's
- 20 just we check in with the lights and they give us
- 21 a report. So I don't want to say that this is
- 22 going to be, you know, the platform for providing
- 23 wifi throughout the City. It's not.
- 24 MR. SILVERS: Okay. All right. Well, that

- 1 was clarifying. Can I -- Mr. Chairman, if you
- 2 don't mind I just want to complement more broadly
- 3 the team on this from an outsider's perspective.
- 4 All right.
- I mean, I believe I sit on this board
- 6 as an advisor partly to bring kind of a national
- 7 infrastructure perspective to the work of the
- 8 Trust. This project is I think exactly -- when
- 9 you look at the conversation about infrastructure
- 10 nationally, the real challenge is is it going to
- 11 be possible to make sort of technological leaps
- 12 in -- at this time with the fiscal constraints
- 13 being what they are.
- 14 And this project has several lessons
- 15 that go beyond Chicago I think in this
- 16 perspective. One lesson is how important it is
- 17 to have people really dedicated to trying to
- 18 figure out the technological and financial
- 19 problems.
- 20 And George's presentation and the
- 21 expertise he's developed is a -- is a sort of an
- 22 example of what kind of value is created when
- 23 there are people really focussed on solving these
- 24 problems as opposed to just sort of the problem

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 being in the air. Right. In which case often is
- 2 not addressed for years. And the opportunities
- 3 are not seized.
- 4 Secondly, I think it's worth noting we
- 5 haven't spent a lot of time on this here because
- 6 it's kind of built in; but there was a very early
- 7 decision here to pursue a low cost of capital
- 8 approach, right. Which led us back to the City
- 9 as the actual provider of financing because they
- 10 had the lowest cost to the City. They had the
- 11 lowest cost of capital.
- 12 But what the Trust provided was the
- 13 focus and expertise. And I think that's evident
- 14 in where we are. And it's really consequential
- 15 in terms of what it tells us about how both
- 16 Chicago and the nation can really practically
- 17 make this leap. All right.
- 18 And so before we moved on from the
- 19 technology, I just wanted to express, you know,
- 20 how pleased I am to be able to be part of that.
- 21 And the fact that it has larger positive
- 22 implications for the country.
- 23 CHAIRMAN SUMMERS: Thank you. Yes.
- 24 MS. HUBBARD: Yes, I had just a couple

- 1 questions. Will this have an impact both on pre
- 2 and post installation on employment within the
- 3 City of Chicago for CDOT?
- 4 And then the second question is have
- 5 we looked at the salvage value of anything that
- 6 we're taking out like poles or anything like
- 7 that? Is there some salvage valuation that we
- 8 can be --
- 9 MR. MARQUISOS: Both good questions. So as
- 10 far as the pre, so we know that there will be
- 11 jobs created as part of the 4-year installation.
- 12 And we anticipate somewhere in the order of 50 to
- 13 100 people who will be working full-time on
- 14 deploying this system.
- 15 Post the ideal is that the durability
- 16 of the LED's will now free up people who go out
- 17 and first check to see whether the lights are
- 18 actually out and then go out and replace a bulb
- 19 that burned out three years after it was
- 20 installed. Those people will now be freed up to
- 21 do other things like repairing wires and things
- 22 that they really -- so we have a group of people
- 23 who are now designated as for lack of a better
- 24 term bulb changers. And they hopefully will be

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 less and less needed as we go forward and they
- 2 can be deployed to other things.
- 3 And I think we are talking about a
- 4 system that will become much more efficient for
- 5 CDOT to generate the work orders, prioritize them
- 6 and issue the work crews to kind of maintain the
- 7 system which has been a continual challenge for
- 8 the City. I mean, a lot of this infrastructure
- 9 is past its useful life and reliability is a big
- 10 concern.
- 11 As Aldermen can attest, their citizens
- 12 want and need lighting reliably delivered. And
- 13 so by just being limited we're trying to do more
- 14 with what they have. And I think we have a good
- 15 chance of getting that.
- 16 CHAIRMAN SUMMERS: The salvage value.
- 17 MR. MARQUISOS: Oh, the salvage value. So
- 18 we -- we went back and forth and did some
- 19 estimates about what is the value of the aluminum
- 20 heads that are coming down? What is the value of
- 21 the steel that's coming down? And it's
- 22 significant in the sense that it's probably in
- 23 the million dollar range all in.
- 24 But we felt that rather than the cost

- 1 of trying to document it and share in it and
- 2 bring it to our yards and do -- we kind of gave
- 3 it to the vendor and asked them to build it into
- 4 their pricing.
- 5 So we asked them to assume the salvage
- 6 values reversed to them and they built it into
- 7 their pricing. That way we're not kind of --
- 8 they still have to document the safe disposal of
- 9 any hazardous materials. So the City gets that
- 10 kind of and -- as well as the recycling of
- 11 everything that's recyclable. So all these
- 12 products that are coming off the poles get
- 13 disassembled and separated and recycled, but the
- 14 salvage value goes to the vendor and that's built
- 15 into their pricing.
- 16 CHAIRMAN SUMMERS: Other questions? Ralph.
- 17 MR. AFFRUNTI: And this might be a little
- 18 bit forward thinking. So is there the
- 19 capabilities for these poles to at a certain time
- 20 have some LED advertisement that would work in
- 21 conjunction with these poles? So let's say one
- 22 of the Aldermen here has a festival in his area,
- 23 most of the time we're hanging banners. Instead
- 24 we would have LED investment?

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 MR. MARQUISOS: Go ahead, Leslie.
- 2 MS. DARLING: So digital advertising banners
- 3 are always going to be an option for the City.
- 4 It's not part of this project. It also requires
- 5 additional infrastructure and also may require
- 6 more bandwidth to the pole than is currently
- 7 there. But that would be a different procurement
- 8 that the City would follow up on. It's not part
- 9 of this one. It doesn't mean it's not possible
- 10 some day, but it's not part of this procurement.
- 11 CHAIRMAN SUMMERS: There is a pilot that the
- 12 City is undergoing right now.
- 13 MS. DARLING: Right.
- 14 CHAIRMAN SUMMERS: It was just announced two
- 15 weeks ago I think for that capability on a small
- 16 scale. And I think what would happen is as
- 17 Leslie said if that pilot proves to be cost
- 18 effective or, you know, revenue generating; then
- 19 there would be a decision whether the poles for
- 20 example or other forms of infrastructure in
- 21 neighborhoods are the best places to expand in
- 22 it.
- 23 In either case it would likely require
- 24 an incremental infrastructure investment.

- 1 Whether it's sort of smart poles if you use the
- 2 pole grid or some other form of, you know, could
- 3 use Divvy stations. You can have any number of
- 4 places where this kind of information can be
- 5 transmitted. In either case it's going to
- 6 require the time, incremental investment in
- 7 infrastructure.
- 8 MS. DARLING: And I think to go back both
- 9 to, Damon, what you're saying also is, you know,
- 10 I think LA has an example where they're in their
- 11 7th year of implementation of their LED lighting
- 12 project. And within the last 18 months they've
- 13 installed I think 150 or 200 -- George, you can
- 14 correct me if I'm incorrect, smart poles which
- 15 are poles with more wireless capability. And
- 16 they have a different contract than their
- 17 conversion contract.
- 18 So, again, sort of this is -- this is
- 19 the first step in this process. And more
- 20 functionality, smart poles, other things, you
- 21 know, other smart city technologies can always be
- 22 added in the future. And we have really worked
- 23 hard to make sure that we have future proofed our
- 24 system to make sure that those additional

- 1 functionalities can be added later in years if
- 2 desired by the City.
- 3 CHAIRMAN SUMMERS: Let's move forward and
- 4 talk about the neighborhood demonstrations.
- 5 MS. DARLING: Sure. So as you know when we
- 6 last talked the City was about to embark on a
- 7 neighborhood demonstration project. So this was
- 8 a demonstration in 7 areas in the City on the
- 9 kind of border of 7 different wards, 7 locations
- 10 from top to bottom.
- 11 And there was an open online survey
- 12 for residents to submit feedback up through the
- 13 9th which is the day that the proposals were due.
- 14 However, if residents are still interested in
- 15 providing feedback when you go to the feedback
- 16 section, there is still an opportunity to send an
- 17 e-mail to us at the Infrastructure Trust. So we
- 18 can still see that feedback.
- 19 We received almost 900 submissions to
- 20 the survey. 88 percent felt that light levels
- 21 were sufficient or more than enough. 64 agreed
- 22 that the LED lighting improved nighttime
- 23 visibility. And 57 percent agreed that the LED
- 24 lights made it easier to distinguish colors at

- 1 night. The white light does provide better
- 2 visibility.
- 3 So we wanted the public to have an
- 4 opportunity to weigh in on the lighting levels.
- 5 These are not the end fixtures that will be used.
- 6 That's obviously still part of the procurement
- 7 process. But it also in addition to the benefit
- 8 of having the public feedback which was
- 9 incredibly helpful, we also learned a great deal
- 10 because our lighting technical advisors went on
- 11 numerous field trips and visited every single
- 12 location.
- 13 And I'll let George very briefly tell
- 14 us about what they learned from that. Because I
- 15 think there were some very valuable lessons from
- 16 the lighting technical advisors that we were able
- 17 to implement and will be able to implement into
- 18 our procurement.
- 19 MR. MARQUISOS: Yes. So I'll try to -- so
- 20 it is a fascinating experience. I recommend it
- 21 to everyone to get in a van with a bunch of
- 22 lighting guys and go out in the City and look at
- 23 various lights in different neighborhoods. The
- 24 information is astounding.

- 1 So what we intended and what we got
- 2 from our public demonstrations is a little bit
- 3 different, but I think in the end it ended up
- 4 being quite valuable. So the intention was that
- 5 we would have 7 almost identical demonstrations.
- 6 And so it would afford citizens 7 opportunities
- 7 to view the same thing and comment on it.
- 8 When we actually went out and visited
- 9 each location, we came to understand that each
- 10 location was somewhat markedly different in so --
- 11 and this is probably a lesson learned, right. So
- 12 one arterial street is not equal to another
- 13 arterial street and same for residential streets.
- 14 So there was quite a bit of variability across
- 15 these 7 locations.
- 16 And in many cases the lights performed
- 17 really well. You could say I love it, well lit,
- 18 even distribution, very little light trespass,
- 19 the glare was manageable, great thing.
- In other cases we had some real
- 21 problems. We had lights that were clearly
- 22 over-illuminating the opposite side of the
- 23 street. And the house that was directly opposite
- 24 the pole was getting washed in light that was

- 1 really unacceptable. So we learned a lot from
- 2 these demonstrations in addition to the public
- 3 feedback. They have all been kind of -- and we
- 4 continue to kind of refine.
- 5 And I think I want to reiterate what
- 6 Leslie said. What we demonstrated was potential
- 7 LED lighting. It was not light fixtures. It was
- 8 not -- and we did not demonstrate dimmable
- 9 opportunities. We didn't do anything like that.
- 10 We just said let's put up some fixtures that
- 11 closely approximate the light levels that we are
- 12 asking for and see what they look like. And it
- 13 was a confirmation of concept, if you will, both
- 14 from the public and from our own internal staff.
- 15 And we have some work to do.
- 16 And I think that the vendors have
- 17 responded in a way that give us options to make
- 18 what we end up installing better than what we end
- 19 up demonstrating. So that's the good news.
- 20 MS. DARLING: Thanks, George. Now, I want
- 21 to get right into the evaluation process. So as
- 22 you know we've discussed before that this is not
- 23 a low bid contract. This was an -- this was a
- 24 best value evaluation. We used a best value

- 1 determination informed by numerous criteria. We
- 2 looked at way more than just pricing.
- 3 We wanted, as George was able to share
- 4 with you, fixture and technology quality and
- 5 capabilities were incredibly important to us. We
- 6 didn't want to just get the lowest price and a
- 7 fixture that didn't meet our requirements. We
- 8 wanted to see if we could sort of have it all
- 9 here with a fixture and technology that provided
- 10 the functionality and quality that we were
- 11 looking for, an approach to project
- 12 implementation that worked in conjunction with
- 13 what the City's needs were, making sure that we
- 14 had a team that had the qualifications and
- 15 experience and local resources and a commitment
- 16 to workforce development and local economic
- 17 initiatives that we laid out very clearly in the
- 18 RFP. Go ahead.
- 19 MR. SCOTT: I have one more question.
- 20 MS. DARLING: Sure.
- 21 MR. SCOTT: It's about capabilities as well.
- 22 So, you know, we all know about the public safety
- 23 dilemma that we're experiencing in Chicago. And
- 24 the district that is in the 24th Ward, the 11th

- 1 District, has been afforded the pilot of
- 2 ShotSpotter.
- 3 Wondering what is the ability to link
- 4 the two so that when that program is rolled out
- 5 across the City, is it possible to use -- right
- 6 now they're affixing them to individual's homes.
- 7 And they have to get a signoff and a waiver from
- 8 that individual. If that ability presents itself
- 9 on any of these new converted heads, I think that
- 10 would be a better possibility for the City of
- 11 Chicago. So has that been explored by CPD and is
- 12 it -- is it compatible?
- 13 MS. DARLING: We have been in touch with CPD
- 14 consistently about this project in working with
- 15 Jonathan Lewin our CIO. He's aware of our
- 16 project and we have been working together on
- 17 plans and how this may be rolled out including
- 18 areas that have public safety issues. So that is
- 19 something that we are -- we are having
- 20 conversations about.
- 21 I don't want to make a commitment to
- 22 you right now, but it's certainly something that
- 23 if they feel the use of the poles and/or these
- 24 fixtures could benefit and, you know, there's a

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 fiscal match up there; then obviously, you know,
- 2 I'm sure that CDOT and CPD would work closely
- 3 together on making that a reality.
- 4 CHAIRMAN SUMMERS: I think just to address
- 5 the concern what I would say is what we can make
- 6 sure the staff does is be proactive rather than
- 7 reactive to wait for them to say understanding
- 8 from your perspective and I've heard this from
- 9 Alderman O'Shea whether we hear from CPD or not
- 10 that it's their priority, from the perspective of
- 11 the two members of the council who are
- 12 represented here, it's something that we should
- 13 be proactively pursuing. So I think the staff
- 14 will do that.
- 15 MR. SCOTT: And I do not -- I don't want a
- 16 guarantee. I just want to make sure that if that
- 17 opportunity presents itself and they match up
- 18 dollar for dollar and it's something that is
- 19 compatible technology wise, that we are exploring
- 20 every possible option to help with not only
- 21 saving costs for them as well as the City; but
- 22 making sure that we've explored, you know, how to
- 23 combat that public safety issue.
- 24 And I know that we have been thinking

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 about that with the lights and the dimming
- 2 capabilities and all the other capabilities. I
- 3 just wanted to make sure that ShotSpotter was on
- 4 the table as well.
- 5 MS. DARLING: Absolutely, Alderman Scott. I
- 6 give you my commitment that we will continue to
- 7 be proactive about that and make sure that we're
- 8 working together with CPD on making sure that we
- 9 are not siloing this project and we're working
- 10 together with all the City departments.
- 11 And, you know, we've really worked
- 12 hard to work with all the stakeholders from OEMC
- 13 to park district to CPD. And I could go on and
- 14 on because there's been so many different
- 15 stakeholders that we have been working with as
- 16 part of this project and we will make sure that
- 17 CPD is prioritized.
- 18 MR. SCOTT: Thank you very much.
- 19 CHAIRMAN SUMMERS: My biggest concern is
- 20 everybody saw this new show last night, APB.
- 21 It's going to be apps and, you know, all kinds of
- 22 stuff.
- 23 MS. DARLING: I heard about that, but I
- 24 didn't see it. Uh-oh.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 MR. SCOTT: It's based here in Chicago as
- 2 well.
- 3 MR. SILVERS: You're responsible for making
- 4 that a reality.
- 5 MS. DARLING: We're going to get right to
- 6 work. So I don't want to spend a lot of time on
- 7 this slide, but I wanted you to see the thought
- 8 process that went into how we consider the total
- 9 project score as we did the evaluation of the --
- 10 of the RFP responses.
- 11 So these are the items that we looked
- 12 at. A little bit about how they were weighted.
- 13 So I wanted you to just sort of get a feel for
- 14 the breath and depth of thought that we put into
- 15 how we were going to weigh the value of these
- 16 proposals.
- 17 I wanted Tom to take a quick minute to
- 18 discuss how the evaluation time and the
- 19 evaluation process works. You know, we really
- 20 wanted to have an aggressive schedule, but a very
- 21 comprehensive and -- comprehensive process with a
- 22 very robust evaluation team that involved, as I
- 23 just said, many of the stakeholders.
- So, Tom, if you could just take, you

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 know, a minute or two and quickly talk about the
- 2 process and we can entertain questions on that.
- 3 MR. BUDESCU: Sure. Thanks, Leslie. So,
- 4 you know, we'll start on the right. The
- 5 evaluation team was set up prior to the proposals
- 6 coming in. And we wanted to have a very defined
- 7 process that once the proposals came in, we could
- 8 move as fast as possible because the goal is
- 9 really to get these lights up as soon as we can.
- 10 And so the evaluation team is composed
- 11 of three broad groups; the technical advisors,
- 12 the evaluation committee and the selection
- 13 committee.
- 14 The technical advisors were
- 15 essentially nonvoting advisors. It was a group
- 16 of City staff as well as staff from partner
- 17 organizations that had the technical expertise to
- 18 support the evaluation committee in better
- 19 understanding the proposals and evaluating the
- 20 proposals.
- 21 There are three separate subgroups
- 22 within that. One was specifically set up to
- 23 provide technical advice on lighting. So
- 24 understanding the luminaire specifications and

- 1 what was being proposed. A technology subgroup
- 2 that helped with the lighting management system.
- 3 And a workforce development subgroup that helped
- 4 evaluate the workforce development plans that
- 5 were coming in for the proposals.
- 6 The evaluation committee was an
- 7 independent review committee that was tasked with
- 8 essentially aggregating all that feedback as well
- 9 as going through all the proposals, scoring them
- 10 and reaching a consensus on the ranking of what
- 11 proposals offer from the best value to the least
- 12 value for the City.
- 13 They would then provide their
- 14 recommendation to the selection committee whose
- 15 job was to review that work, review that
- 16 recommendation and either accept or reject. And
- 17 if they accept, they would then provide that
- 18 recommendation to the executive director of the
- 19 Infrastructure Trust.
- 20 So very quickly and in a little more
- 21 detail, it was really a four-phase evaluation
- 22 process. The preliminary responsiveness review
- 23 was conducted by the CIT to say, we received six
- 24 proposals. Do they meet the criteria we set out

- 1 as responsive -- for responsiveness in the RFP?
- 2 And all six did. Which moved them to the scoring
- 3 phase and the independent proposal review by the
- 4 evaluation committee. This included oral
- 5 presentation and demonstration of the technology
- 6 solution by each of the proposers, a review by
- 7 the technical advisor meetings and separate
- 8 workshop with each of the technical advisor
- 9 subgroups to provide their insight and feedback
- 10 to the evaluation committee and also for the
- 11 evaluation committee to ask the technical
- 12 advisors any questions they had in terms of
- 13 interpreting the proposals.
- 14 Then there was a preliminary scoring
- 15 consensus by the evaluation committee and a
- 16 consensus decision about whether to request best
- 17 and final offers or not. And then finally there
- 18 was a final evaluation committee census on best
- 19 value determination. That was phase three.
- 20 That evaluation committee
- 21 recommendation was then memorialized and provided
- 22 to the selection committee and presented as part
- 23 of an in-person presentation by representatives
- 24 of the evaluation committee to provide the

- 1 rationale for their recommendation as well as
- 2 afford the selection committee the opportunity to
- 3 ask the evaluation committee any questions about
- 4 their process.
- 5 MS. DARLING: Thanks, Tom. We really wanted
- 6 to -- we really wanted to create this vision and
- 7 set the stage to make it a reality. We were
- 8 given a very high-level idea, as George had
- 9 mentioned, and we worked to craft the scope and
- 10 the process to really improve the quality of life
- 11 for Chicago residents. We wanted to make sure
- 12 that we were saving energy and providing better
- 13 services to City residents and providing better
- 14 quality of light and quality of life.
- 15 Also, we wanted to create additional
- 16 jobs to the extent that this project will be able
- 17 to do that. We are very pleased about where we
- 18 ended up.
- 19 And so, you know, at this point we are
- 20 happy to answer additional questions; but we
- 21 would like to recommend the resolution that you
- 22 were sent previously and sits before you
- 23 regarding moving the great finalists to the City
- 24 so they may begin negotiations of the selected

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 members.
- 2 CHAIRMAN SUMMERS: Yes.
- 3 MR. SILVERS: Could the staff amplify --
- 4 explain a bit more about the workforce
- 5 development part of the criteria? What you were
- 6 looking for and --
- 7 MS. DARLING: Sure, absolutely.
- 8 MR. SILVERS: And so where we are.
- 9 MS. DARLING: So, first of all, I can tell
- 10 you that the finalists all met or exceeded the
- 11 MBE/WBE requirements as set forth in the RFP. We
- 12 also are requiring in the RFP and the finalists
- 13 agreed to meet the requirements of having 50
- 14 percent of the work hours be performed by City of
- 15 Chicago residents.
- 16 Of those 10 percent are going to be
- 17 from economically disadvantaged neighborhoods as
- 18 set forth in the City's EEO ordinance and a map
- 19 created by the Department of Planning and
- 20 Development. Those are split into 2 areas of the
- 21 City.
- 22 And so the west and south sides of the
- 23 City will be separate -- are in separate parts of
- 24 the map. So 5 percent from each west and north

- 1 and 5 percent from east and south. So and I
- 2 would be happy to provide that map to you.
- 3 MR. BUDESCU: Yes, there is also a
- 4 requirement that 50 percent of the staff hired to
- 5 do the asset condition assessment --
- 6 MS. DARLING: Thank you.
- 7 MR. BUDESCU: -- in the first year of the
- 8 project have to be -- come from either CPS
- 9 programs that are -- there's a specific
- 10 requirement.
- 11 MS. DARLING: Yes, it's a vocational program
- 12 and -- or from the Chicago Community College
- 13 Vocational Program.
- 14 MR. BUDESCU: Or from an ex-offender
- 15 apprentice program.
- 16 MS. DARLING: Right. So and all of the
- 17 respondents agree to do that and abide by that
- 18 and made a commitment one way or the other. We
- 19 believe that we'll be able to meet or exceed
- 20 those workforce recommendations and requirements
- 21 with selected measures.
- 22 MR. BUDESCU: And one more thing. There was
- 23 also an encouragement to meet the City's minority
- 24 and female participation goals as set out in the

- 1 EEO ordinance as well.
- 2 MS. DARLING: Correct.
- 3 MR. BUDESCU: And those that provided a
- 4 commitment to do so were given positive
- 5 consideration in the evaluation of their
- 6 workforce development plan as well.
- 7 CHAIRMAN SUMMERS: I think just to make sure
- 8 that we didn't miss anything, after the meeting
- 9 we can just send around what those criteria were.
- 10 MS. DARLING: Yes.
- 11 CHAIRMAN SUMMERS: They were part of the
- 12 public documents.
- 13 MS. DARLING: They were part of the public
- 14 documents and also part of your briefing.
- 15 MR. SILVERS: Thank you.
- 16 CHAIRMAN SUMMERS: Any other questions?
- 17 MR. LINGENFELTER: Just to really backhoe on
- 18 Damon's earlier points. To be a procurement
- 19 aficionado to be able to go through a process
- 20 like this and to get such significant, you know,
- 21 multiple respondents that were qualified across
- 22 such a complex process is really a credit to all
- 23 of you for structuring it. And sort of
- 24 demonstrates the value that you get when you get

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 a dedicated set of people to coordinate the
- 2 complexity and the innovation. And so I support
- 3 a best value process and to have the level of
- 4 interest we had sustained through this is a real
- 5 accomplishment.
- 6 CHAIRMAN SUMMERS: Everyone has been
- 7 provided a copy of the resolution that's proposed
- 8 instructing the team here to having reviewed
- 9 responses from all six proposers and received a
- 10 recommendation of two finalists to move forward
- 11 with negotiations for the project in recommending
- 12 that to the City of Chicago moving forward with
- 13 those two finalists. If there are no other
- 14 questions, I'd by happy to entertain that motion.
- 15 MS. HUBBARD: So moved.
- 16 CHAIRMAN SUMMERS: Moved by Miss Hubbard.
- 17 Seconded by Mr. Lingenfelter.
- 18 All in favor?
- 19 (Chorus of ayes.)
- 20 CHAIRMAN SUMMERS: Any opposed?
- 21 (No response.)
- 22 CHAIRMAN SUMMERS: Motion passes.
- 23 MS. DARLING: Thank you very much. So
- 24 moving quickly through the rest of our agenda. I

- 1 appreciate your indulgence and patience on the
- 2 Smart Lighting.
- For Home Buyer's Assistance winter is
- 4 always a slower period for home buying in the
- 5 Chicago area. We are looking forward to kicking
- 6 up in the spring. The Home Buyer's Assistance
- 7 Program now has 15 approved lenders. We have
- 8 closed loans in 37 of the City's 50 wards.
- 9 In 2017 we are looking forward to
- 10 increasing the reach of the program including
- 11 through ward events. Both Alderman Scott and
- 12 Alderman O'Shea have hosted events in their ward.
- 13 One for constituents and one for realtors and
- 14 lenders. We are hoping to do more work with the
- 15 realtor and lender community as well as the
- 16 community at large to spread -- continue to
- 17 spread the word on this program.
- 18 We expect that we'll have about \$23
- 19 million in loans closed shortly. And we have
- 20 almost 7-and-a-half million dollars worth of
- 21 loans that are pre-qualified for 36 borrowers.
- 22 So this has been a good start to the program, but
- 23 we are looking forward to really increasing our
- 24 capability on this and continuing to drive

- 1 investment in our neighborhoods.
- 2 CHAIRMAN SUMMERS: One of the things that,
- 3 Ralph, you mentioned before and I know Kristi had
- 4 come out to speak with your guys, but that, you
- 5 know, springtime is obviously an important time
- 6 for this. I think we should really plan to -- I
- 7 know there is some staffing associated with this
- 8 as well. But plan to gear up before the
- 9 springtime and peak home buying and revisit with
- 10 you, Ralph, and all of the member organizations
- 11 between you and Jorge and Miss Fredop (phonetic).
- 12 If you look at the numbers here, this
- 13 is kind of just off the top of my head; but of
- 14 the loans that have closed so far, you know,
- 15 you're talking about an average home of about
- 16 \$220,000. You know, average family income of,
- 17 you know, just north of \$70,000. And credit
- 18 score just south of 700. You know, this is --
- 19 this could not be further in the middle of
- 20 working families of Chicago. Right.
- 21 And the number of people that this
- 22 applies to is massive. And we've had, you know,
- 23 good traction, but this isn't -- this is the --
- 24 the euphemism, the tip of the iceberg. This

- 1 isn't even the tip of the iceberg. This is like
- 2 a snowflake off of the top.
- And just a tremendous -- you know, the
- 4 average grant size is somewhere on the order of
- 5 \$8,000. You know, this is -- \$8,000 would
- 6 effectively, you know, free money that we're
- 7 having a difficult time with 81 loans closed
- 8 getting more folks to apply.
- 9 So I think we need your help, Ralph,
- 10 and some of your colleagues. We need your help,
- 11 Alderman Scott and Alderman O'Shea, with your
- 12 colleagues in getting more traction. Figuring
- 13 out what went well, what didn't go well. Because
- 14 this is such a tremendous opportunity that is
- 15 made available because of, you know, kind of
- 16 where we are in the cycle. And I think as
- 17 there's more rate uncertainty, it will -- it
- 18 should spark even further interest in people
- 19 wanting to kind of lock in sooner.
- 20 So as we approach the spring and as we
- 21 approach potentially more rate uncertainty, you
- 22 know, we would love your feedback to the team in
- 23 how we get this out, get this widely adopted and
- 24 take advantage of this next season.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 MS. HUBBARD: I just wanted to ask one
- 2 question and I have to leave unfortunately. I
- 3 mentioned that to you, Leslie. Is it impacted by
- 4 the potential increase in interest rate or is it
- 5 a fixed rate on this program?
- 6 CHAIRMAN SUMMERS: Well, so all the rates
- 7 are subject to whatever the rates of the lenders
- 8 are.
- 9 MS. HUBBARD: Okay.
- 10 CHAIRMAN SUMMERS: So if -- if the -- if
- 11 people believe pay rates are going up, I better
- 12 lock in even my refi now let alone purchase a new
- 13 home, you know, there's -- there is a benefit to
- 14 early action.
- 15 MS. CAFARO: Mr. Chairman, it's February and
- 16 it's already spring in Chicago I think looking
- 17 outside. And I do think this is -- we are not
- 18 approaching actually the season. I think we are
- 19 in it. So I would accelerate that. Usually post
- 20 Super Bowl --
- 21 CHAIRMAN SUMMERS: People start --
- 22 MS. CAFARO: So I would -- I think your
- 23 comments are right on, but maybe it's more
- 24 immediate.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 CHAIRMAN SUMMERS: Yes. And I've seen, you
- 2 know, we've participated in the City service
- 3 fairs, we've participated in different
- 4 aldermanic; it just hasn't taken hold.
- 5 MS. CAFARO: And it should.
- 6 CHAIRMAN SUMMERS: And it absolutely should.
- 7 Again, average size of the grant is \$8,000.
- 8 These are working families. You know, full
- 9 family income with \$70,000 on average. Not, you
- 10 know, stellar credit scores. And the fact that
- 11 it's in 37 of the 50 wards means it's applicable
- 12 everywhere.
- 13 So, you know, I think we have to be
- 14 more thoughtful, but more creative about it. We
- 15 also haven't had the dedicated resource to it
- 16 which I think will help as we try to do that.
- 17 But, you know, I think being
- 18 thoughtful in partnerships with the realtors
- 19 maybe and sort of doing more of that. The
- 20 lenders have been helpful, but there's only so
- 21 much that they're going to do. I think the
- 22 realtors are the ones who are trying to, you
- 23 know, drive demand.
- 24 MS. DARLING: And we did meet with the --

- 1 just to add to that, we did meet with the
- 2 Illinois Association of Realtors, their public
- 3 policy committee, and they sent out a blast
- 4 through the MLS Service to all the realtors that
- 5 show in the City of Chicago to make them aware of
- 6 the program.
- 7 So we have been taking steps to spread
- 8 the word. We are obviously going to become more
- 9 aggressive. So this is not the only program like
- 10 this that's available. So we have to make sure
- 11 that the program also stays competitive.
- 12 CHAIRMAN SUMMERS: Yes.
- 13 MS. BARRETT: This update and the
- 14 partnerships you just mentioned in relation to
- 15 the realtors are really important. In addition,
- 16 there is a network of not-for-profit housing
- 17 counseling organizations. And like you said
- 18 there is a lot of offerings out there. So
- 19 backing -- backup that marketing push I think
- 20 would be helpful, and we can assist with that
- 21 network of organizations as well as there's been
- 22 a fair amount of attention to the Cook County
- 23 Land Bank making both land and parcels with homes
- 24 on them available. So there may be some

- 1 partnership marketing opportunities there.
- 2 CHAIRMAN SUMMERS: Yes, I also think that
- 3 there's -- you know, there was -- you're more
- 4 familiar with this probably than anyone, Mary
- 5 Sue, but the hardest hit program that was driven
- 6 by the U. S. Treasury that put money in the
- 7 states in this case that will be -- we talked a
- 8 little bit about this, that will be the local
- 9 agency that administers as IDA. Which I think
- 10 Kim used to run actually.
- 11 But I think that after this session in
- 12 Springfield there will be more attention to that
- 13 program. And the sort of release and
- 14 proliferation of those resources driving more
- 15 demand. And I think that these two programs are
- 16 not mutually exclusive and can be done in
- 17 conjunction.
- 18 I think that's part of the -- you
- 19 know, Leslie raises the issue. There are a lot
- 20 of different housing programs out there. And us
- 21 being clearer about what we can partner with and
- 22 what by definition is similar and needs to be
- 23 mutually exclusive, I think will be helpful in
- 24 partnering with the folks who are already --

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 MS. BARRETT: Experts.
- 2 CHAIRMAN SUMMERS: Yes, experts in marketing
- 3 there and will help a lot. Okay.
- 4 MS. DARLING: So we are going to continue to
- 5 be very involved in the Smart Lighting Project
- 6 both through the contract negotiation process and
- 7 at least the first year of implementation at the
- 8 request of the City. So we expect that that will
- 9 continue to be a pole on our resources
- 10 particularly through getting a contract executed
- 11 and getting the project up and running. So we
- 12 expect that will continue to take quite a bit of
- 13 our resources.
- 14 But we are, as you know, continuing to
- 15 explore new opportunities in pertaining to the
- 16 development of many new projects. We are
- 17 continuing to work on a Retrofit 2 Project. We
- 18 have a meeting set up next week that the City is
- 19 coordinating. So we will be circling back with
- 20 you on a possibility of additional energy savings
- 21 projects.
- 22 So that is -- that is what I can share
- 23 right now. I don't have a lot of specifics on
- 24 additional projects that are under consideration,

- 1 but we are consistently working on maximizing
- 2 value of underutilized assets for the City and
- 3 also looking to partner with the City on future
- 4 investments.
- 5 I think we are very uniquely
- 6 positioned. We think the Smart Lighting Project
- 7 has proven out what we are capable of and we are
- 8 looking forward to partnering with the City as we
- 9 go forward.
- 10 I've spent some time talking to
- 11 Chairman Summers about some other ideas about
- 12 using some of our own program funds to see what
- 13 we can do to continue to invest in our City even
- 14 a small amount. We feel like that may be a very
- 15 beneficial use of our time and look forward to
- 16 brainstorming with all of you on that in the
- 17 coming months ahead.
- 18 We want to get a jump on that and are
- 19 looking forward to having more to share with you
- 20 in the comings months. But as always we are --
- 21 want to tap the great resources that you as the
- 22 board have and are open to hearing your ideas
- 23 and, of course, the ideas in the broader
- 24 community.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 MS. DARLING: Miguel.
- 2 MR. ZARATE: Just a question. Is the
- 3 Department of Energy Loan Program still on the
- 4 table for us?
- 5 MS. DARLING: No, it is not.
- 6 CHAIRMAN SUMMERS: Okay. I think now we
- 7 have the time for public comment. If there are
- 8 any -- those wishing to make public comment.
- 9 MS. DARLING: Did you sign in today?
- 10 (Discussion outside the
- 11 record.)
- 12 MR. SILVESTRI: My name is Larry Silvestri.
- 13 I'm from Michigan City, Indiana. I live at 314
- 14 Kenwood Place. I am the Vice President of the
- 15 Michigan City Redevelopment Commission and I'm
- 16 Secretary of the Michigan City Park Board, but
- 17 I'm speaking as an individual. I wasn't asked to
- 18 attend this meeting.
- 19 I have been an amateur astronomer for
- 20 50 years. And from the Indiana Dunes 40 miles
- 21 away the sky is lit up so brightly that on the
- 22 darkest night you can easily walk and in --
- 23 without a flashlight. And the brightest sort of
- 24 light pollution from that distance is the City of

- 1 Chicago.
- 2 During my lifetime I've seen the stars
- 3 disappear. And, for example, from the beach at
- 4 the Indiana Dunes, the City of Chicago at
- 5 midnight looks like sunrise. And so that's
- 6 contributing to the sky glow over -- the light
- 7 dome over the City of Chicago is contributing to
- 8 the light sky glow over the Indiana Dunes.
- 9 But, yeah, so this is not -- not
- 10 necessary. It -- if you can walk at the Indiana
- 11 Dunes with no light, and I'm not suggesting that
- 12 you eliminate all lights in the City of Chicago;
- 13 but the lighting is unnecessarily bright.
- 14 Because just by your own public comments 88
- 15 percent of the public say that the sky or that
- 16 the demo lights is more than sufficient.
- 17 Now, I mean, that sounds like a good
- 18 thing, but it's actually a bad thing. The -- I
- 19 wonder if you had an expert on vision on your
- 20 list of technical experts. Because by increasing
- 21 the lighting, you're actually increasing the
- 22 contrast. So in a shaded area it -- from an
- 23 illuminated street to look into a dark section,
- 24 it's actually more difficult to see. So, you

- 1 know, there is actually some disadvantage to
- 2 increasing the lighting.
- 3 But there is several things, several
- 4 factors, the blue content shielding timers which
- 5 I think you've got covered. And, like I said,
- 6 the contrast. But the blue content of the light,
- 7 that interferes with your night vision. So if
- 8 you're dark adapted in one area and walk into the
- 9 blue rich section under the LED lights, not that
- 10 LED's are particularly different than mercury
- 11 vapor; but the effect is the same and -- although
- 12 LED's are more efficient and cost effective.
- 13 But so your damage -- your night
- 14 vision you go back into a darker area, it's going
- 15 to take you, you know, minutes or more to adapt.
- 16 The blue content has several effects.
- 17 Well, the AMA, American Medical Association,
- 18 recommends that it be 3,000 Kelvin or less and
- 19 that's just over the summer they made this
- 20 recommendation. So your lights are at the
- 21 highest limit of the American Medical Association
- 22 recommendation. Also, the International Dark Sky
- 23 Association recommends 3,000. And they have been
- 24 both, you know, lowering their color temperature.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 CHAIRMAN SUMMERS: Mr. Silvestri, if I could
- 2 ask you to wrap up your comments here.
- 3 MR. SILVESTRI: Okay.
- 4 CHAIRMAN SUMMERS: I'm sorry, but we have a
- 5 three-minute time limit. I didn't say that
- 6 upfront, so I let you go over a bit. So If you
- 7 could just --
- 8 MR. SILVESTRI: Okay. Michigan City just
- 9 had a test intersection at Franklin and 6th
- 10 Street. And we left that up for almost a year.
- 11 And we went through several iterations of
- 12 different light. Just for our small, you know,
- 13 our district. And we settled on 3,500 Kelvin.
- 14 And we regret that because now the AMA is
- 15 recommending 3,000. This is after the fact.
- 16 Now, I would ask -- in conclusion I
- 17 would ask that you do another demo. By your own
- 18 admission this is not the final product. You say
- 19 that the next -- the full rollout of all the
- 20 streetlights will be better, but why not do a
- 21 demo of the final product. And I would recommend
- 22 far below the 3,000 Kelvin color temperature.
- 23 CHAIRMAN SUMMERS: Thank you. Thank you
- 24 very much.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 MR. SILVESTRI: You're welcome.
- 2 CHAIRMAN SUMMERS: Miss Fischer. Again, if
- 3 you can keep your comments to three minutes or
- 4 less.
- 5 MS. FISCHER: If you can give me clue
- 6 because I -- you know.
- 7 CHAIRMAN SUMMERS: No problem.
- 8 MS. FISCHER: I have been involved -- my
- 9 heart has been involved in this since 2008,
- 10 probably before then. I've donated tens of
- 11 thousands of hours studying the light pollution
- 12 issue. Originally for starlight, but because of
- 13 my cancer history I now have a dedication for
- 14 reducing the health issues of light at night.
- 15 Briefly it turns out that life
- 16 involved in the planet with the day and night
- 17 that your brain is suprachiasmatic nucleus and
- 18 the brain interprets that as blue light in the
- 19 daytime, lack of blue meaning nighttime.
- 20 So when the retina notices blue light,
- 21 it immediately within one second shuts down your
- 22 melatonin production. What does that have to do
- 23 with health?
- 24 Turns out that lack of melatonin

- 1 signaled by blue light at night will give you a
- 2 higher increased rate of breast, prostate, bone
- 3 cancers, some pancreatic, some lymphomas,
- 4 aggression, sleep disorders, more propensity for
- 5 wanting drugs and alcohol, that ability of not
- 6 being able to control and mood disorders, memory
- 7 disorders and more.
- And not only that, it hurts maybe the
- 9 wildlife and the ecosystems. So there's so much,
- 10 much more I can't -- you know, at the time I
- 11 can't go into this. But Larry was right.
- 12 There's LED's that come in all different
- 13 spectrums.
- 14 One of the top experts in the world
- 15 did a \$10,000 project for me for my Christmas
- 16 project just to show what Chicago would look like
- 17 with different light colors, and I can share this
- 18 with anybody here. I have 3 sets here that I can
- 19 give to you.
- 20 And I am nervous as heck because I
- 21 don't sleep well at night because I'm scared to
- 22 death of what you're going to decide. First, I
- 23 can show you this later. SLI, means starlight
- 24 index and MSI meaning melatonin suppression

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 index. It's easiest to determine if you look at
- 2 Lake Michigan where you see a darker line in
- 3 here. The point of this what I'm trying to show
- 4 you is that starlight, your melatonin index is
- 5 suppressed quicker than starlight. One minute.
- 6 Okay.
- 7 So you've all noticed that your stars
- 8 were missing. Your melatonin has been suppressed
- 9 causing mental and physical issues. It's hurting
- 10 the birds. It's even hurting the monarchs.
- 11 That's new news. And I can tie it into
- 12 aggression. And I think it can be deliberately
- 13 tied into our high aggression rate.
- 14 We are the most light polluted city in
- 15 the world dammit and now we have the chance to
- 16 fix it and be the best most -- the best lit city
- 17 in the world.
- 18 This is -- this is PC amber. Every
- 19 research -- and I can show you thousands of
- 20 documents and I read every one of them. Every
- 21 single one says minimize the blue. No one says
- 22 increase the blue.
- 23 And this is -- this is 3,000 Kelvin.
- 24 What you want to do. Now, look at how it effects

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 the people 100 miles away from us. If we all do
- 2 PC amber our entire -- 100 miles away from us
- 3 we'll all have the opportunity of starlight and
- 4 the Milky Way.
- 5 CHAIRMAN SUMMERS: Thank you, Miss Fischer.
- 6 Thank you.
- 7 MS. FISCHER: And more than that they'll be
- 8 healthier for it.
- 9 CHAIRMAN SUMMERS: Thank you. Next speaker
- 10 is -- I can't see this last name. Terry? What's
- 11 the last name?
- 12 MR. CORNEL: No, I'm passing.
- 13 CHAIRMAN SUMMERS: Okay. Barnaby?
- 14 MR. LUAUTERS: Right here.
- 15 CHAIRMAN SUMMERS: Come on up.
- 16 MR. LUAUTERS: I want to thank everyone on
- 17 the board for all their efforts. And I think
- 18 it's been an incredible collaboration and on the
- 19 technical side, everything. So I want to thank
- 20 everyone.
- 21 I have been involved in this
- 22 conversation online and I was just wondering the
- 23 input from the City and people like advocates
- 24 like the lady there, has that been taken into

- 1 account in the procurement process and to what
- 2 degree has that been taken into account?
- 3 So night sky, Kelvin, color
- 4 temperature, light trespass. How much of has
- 5 that been part of the conversation in the
- 6 procurement process or -- I'm sure it has been,
- 7 but is that -- is -- to what degree has that
- 8 input been taken into account?
- 9 CHAIRMAN SUMMERS: Well, what we will do is
- 10 if there is a question, then after all the
- 11 comments we'll have a statement that addressing
- 12 anything that --
- 13 MR. LUAUTERS: Oh, I see. Okay. So I hope
- 14 that the input from the City because I didn't see
- 15 on there any input about like color temperature,
- 16 night sky. Like, you know, we want to make this
- 17 the best for the City and the region. And I know
- 18 everyone here does to really set an example for
- 19 what Chicago can do.
- 20 So we encourage you to, you know, and
- 21 I don't know where the procurement process is
- 22 because I work in construction. And once you're
- 23 down the line in procurement, any change costs
- 24 money. And so I'm wondering, you know, at what,

- 1 you know, hopefully we can see actual mockups of
- 2 what they're going to -- what's been procured and
- 3 then be able to make adjustments after that.
- 4 Because otherwise, you know, once it's
- 5 procured because as you said the test light areas
- 6 are not representative of what we're going to get
- 7 ultimately. So it's sort of moot to go look at
- 8 them. Because I've been to them and they're very
- 9 bright and very blue. And so, you know, a lot of
- 10 people don't feel like those are going to be
- 11 beneficial for, you know, health and lighting.
- 12 So ideally you can see a mockup of what's going
- 13 to be procured and then be able to make
- 14 adjustments because anything other than that is a
- 15 waste of time.
- 16 So and thank you for your time and
- 17 effort. And we hope you make the absolute best
- 18 decision for Chicago. Thank you.
- 19 CHAIRMAN SUMMERS: Thank you. Anthony
- 20 Harris.
- 21 MR HARRIS: Hello. Hi. I would like to
- 22 thank the board for all the hard work they've
- 23 done and this opportunity to speak. I have, in
- 24 fact, visited a number of the sites. Based on

- 1 the October 18th meeting here, the claims made
- 2 the lights would be, you know, not have much
- 3 glare and be cut off. I was looking forward to
- 4 the new sites.
- 5 When I saw the sites I was really
- 6 quite disappointed. The lighting is -- the word
- 7 that's been used is crisp, but it's actually not
- 8 crisp. It's harsh. And I think although the
- 9 tent pole achievements proposed, all the data
- 10 that will be received from the fixture and so
- 11 forth; they -- in my opinion the lights fail at
- 12 their most critical element.
- 13 And that is because Chicago is an
- 14 amazing beautiful city. These lights don't
- 15 achieve that goal. And it has to do with a very
- 16 poor design in the fixtures. The LED's
- 17 themselves are very tiny point sources. Point
- 18 source illumination produces these dark, you
- 19 know, bright areas and then dark shadows. And
- 20 these lights, the fixtures, lack a diffusing
- 21 element.
- 22 Another thing also is that if you talk
- 23 to people, you'll find a lot of people claim that
- 24 these lights actually hurt their eyes they're

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 that bright. In fact, they are about 1/30th as
- 2 bright as the surface of the sun.
- 3 And I'm sure many of us by now have
- 4 been driving on the road and we've seen some of
- 5 these new car headlights with the LED's. They're
- 6 great if you are behind the steering wheel, but
- 7 for the oncoming traffic if you're driving into
- 8 them, they're very unpleasant. And Chicago is
- 9 going to put that type of lighting in all these
- 10 fixtures.
- 11 So I would humbly advocate and ask
- 12 that a new lighting design is chosen. Something
- 13 that has a warmer hue and a diffusing element so
- 14 that Chicago is put in the best possible light
- 15 and also with a full cutoff so the lights aim
- 16 downward. Thank you very much for this
- 17 opportunity to speak.
- 18 CHAIRMAN SUMMERS: Thank you, Mr. Harris.
- 19 Before we go to executive session if Leslie or
- 20 George you want to respond to some of what we
- 21 heard here in the public comment period.
- 22 MS. DARLING: Sure. I think I'll turn it to
- 23 George and then wrap up.
- MR. MARQUISOS: Okay. First of all, I

- 1 appreciate all of your -- there's nothing better
- 2 than concerned citizens kind of coming forth and
- 3 expressing these points of view. And I think
- 4 that they are relevant.
- 5 And to answer your question, do we
- 6 take things seriously? Yes. And have we spent a
- 7 lot of time looking at and researching all forms
- 8 of how these lights are being perceived? And,
- 9 again, I'm not a lighting expert, but we are
- 10 lucky enough to have partnerships with people who
- 11 are. So the people who are writing the codes,
- 12 the ANSI standards right now for LED lights in
- 13 the future are on our team. And they're part of
- 14 the technical advisors that assisted us.
- 15 And I just want to give you -- this is
- 16 not a -- I'll give you an example of the kind of
- 17 balancing that we're trying to accomplish here.
- 18 So let's just take the example of amber light.
- 19 And, again, it's a warmer light. It is more in
- 20 line with the color temperature of high pressure
- 21 sodium. Why not put it in? Right. There's no
- 22 -- there's no downside.
- Well, amber lights as best we know,
- 24 again, aren't widely manufactured and not readily

- 1 available. But that aside we have pretty much
- 2 understood that whether -- they're less available
- 3 than the current.
- 4 So an amber light now is producing
- 5 somewhere around 74 lumens per watt as opposed to
- 6 120 lumens per watt per 3,000 Kelvin. What does
- 7 that mean? Why do I care?
- What that means is if everything went
- 9 amber, the City of Chicago would spend \$6 million
- 10 more per year on it's electric bill. And over
- 11 the 15-year useful life of that, that translates
- 12 to over \$100 million at current rates. So that's
- 13 not even assuming electric rates go up. That's a
- 14 real consideration. And I'm not saying that it's
- 15 the only consideration, but we're trying to
- 16 balance a host of things.
- 17 And in addition to that we have people
- 18 who live in neighborhoods with high crime and
- 19 they like the visibility, the greater
- 20 effectiveness of surveillance cameras. They like
- 21 the peripheral vision, the color rendition.
- 22 There's a lot of aspects in whiter light that
- 23 some people respond to and very much appreciate
- 24 in value.

- 1 So there is a host of opinions and
- 2 perceptions about how lighting should, in fact,
- 3 be deployed. The beauty I think of what we have
- 4 and where I'm hoping to answer your question, we
- 5 are not locked into a procurement. So whatever
- 6 we buy, this phase one, we're stuck with for the
- 7 next four years. We have built in a process
- 8 whereby we have the ability and actually it's
- 9 mandatory that we reprocure light fixtures every
- 10 year. So we are not locked in and there is no
- 11 built-in cost for changing fixtures.
- 12 And actually we have the reverse. We
- 13 are anticipating that the cost of light fixtures
- 14 are going to come down over the next four years
- 15 and we have a method where the City takes
- 16 advantage of those advancements. And so we've
- 17 built that in, some flexibility, into our light
- 18 fixture selection process moving forward.
- 19 The other good thing is those light
- 20 demonstrations that you're seeing now that many
- 21 are interpreting as being too bright or too
- 22 harsh, the dimmable drivers built into each one
- 23 of these fixtures allows us -- what we know about
- 24 LED lights is 15 years from now they will

- 1 probably not be burned out. They will be
- 2 probably delivering less light than they do day
- 3 one.
- 4 So we have the ability to now dim them
- 5 to the point where we get the average light that
- 6 we expect over its 15-year duration. And that
- 7 affords us the ability to keep a consistent level
- 8 of light throughout its entire useful life.
- 9 These are all things that give us the
- 10 ability to respond to and adjust as we learn more
- 11 and adapt to what the citizens of Chicago need.
- 12 MR. SILVERS: Can I just ask George to
- 13 address the diffusion point the gentleman made
- 14 earlier.
- MR. MARQUISOS: Yes, okay. So there's been
- 16 a lot of -- and I'm reluctant to get into it too
- 17 much.
- 18 MR. SILVERS: Please not too much, but some.
- 19 MR. MARQUISOS: These will be fully shield
- 20 and full cutoff. And so all our lights have been
- 21 specced so far. And the lights that are being
- 22 demonstrated are zero up-light lights. So there
- 23 is no light that is allowed to be transmitted --
- 24 obviously if it gets reflected up, that's another

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 thing. But there is no light that is being
- 2 transmitted above the horizon line of the fixture
- 3 itself. So if the fixture is at 20 feet, there
- 4 is no light being transmitted above 20 feet. And
- 5 that is per the specification. And that is per
- 6 the recommendations of the Dark Sky and the AMA.
- 7 And so the light is being directed down.
- 8 Now, LED's have different lenses that
- 9 we try to disperse the light. We are limited by
- 10 the location of our poles. The poles are where
- 11 they're at. We don't have the money to move
- 12 them. We don't have the money to change them.
- 13 So we have to figure out a fixture that is going
- 14 to deliver the light in an average dispersion and
- 15 not trespass as best we can given, you know, the
- 16 restriction of the constraint of the pole height
- 17 and location. And that's what we are going to
- 18 continue to work on and refine over and over and
- 19 over again.
- 20 And this is an ongoing process. I
- 21 don't want anyone to come away thinking it's a
- 22 done deal. This is what the City is going to
- 23 get. We are learning every time we deploy.
- 24 CHAIRMAN SUMMERS: All right.

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 MR. LUAUTERS: Could I add just one
- 2 question? I know I only had three minutes. I'm
- 3 sorry. Just one question about the Kelvin
- 4 temperature. If we are shooting for 3,000 and in
- 5 procurement we get maybe a little more, you know,
- 6 or just at 3,000; why can't we come down to a
- 7 warmer temperature?
- 8 Because I think that's one of the
- 9 key -- the key things. Like where are we going
- 10 to end up? And how are we going to assure that
- 11 we are going to end up where we want to be?
- 12 CHAIRMAN SUMMERS: Okay. What we're going
- 13 to do is George will be available after the
- 14 session. And he's done a good job of responding
- 15 to public comments which isn't a requirement.
- 16 We're doing it because we think it's the right
- 17 thing to do. And rather than keep everyone and
- 18 spend time on that question, he'll be around just
- 19 after.
- 20 Leslie, do you have anything else you
- 21 wanted to say before I'll make a quick comment
- 22 before we adjourn?
- 23 MS. DARLING: No, but I think George really,
- 24 really addressed the questions and issues that

- 1 came up from the public comment. I do want to
- 2 echo his appreciation. We do take public comment
- 3 and we have taken the public's reaction to this
- 4 project into consideration. We have taken it
- 5 extraordinarily seriously and we've tried to
- 6 balance all the interests to come out with a
- 7 project that works for as many Chicagoans as
- 8 possible.
- 9 This is going to be a change in the
- 10 night sky in the City of Chicago and we are very
- 11 appreciative that that change is going to occur
- 12 and some people are welcoming it and some people
- 13 less so. Our goal is to make sure that we are
- 14 delivering a great project for the City of
- 15 Chicago and its citizens. We appreciate your
- 16 comments.
- 17 This, as George said, is not a done
- 18 deal. We have not completed the procurement
- 19 process. We'll have the opportunity to continue
- 20 to tweak to make sure that we're delivering the
- 21 best light. We are following, as a couple of
- 22 people mentioned, the AMA recommendations and the
- 23 International Dark Sky Association's
- 24 recommendation of 3,000 Kelvin light. This will

- 1 only be the spec for the first year. We are able
- 2 to take advantage and work it into the contract
- 3 and the ability to take advantage of both
- 4 decreases in price and increases in technology
- 5 as the project continues.
- 6 So we certainly look forward to
- 7 keeping you updated. And there will be a lot of
- 8 public outreach as a part of this project I have
- 9 implemented. And I think you'll see, you know,
- 10 possibly websites and where you'll be able to see
- 11 where the lights are going to be deployed. And
- 12 there will be a lot of information available to
- 13 the public and we'll look forward to keeping you
- 14 updated.
- 15 CHAIRMAN SUMMERS: Let me just say that the
- 16 -- this has been a more than year long process
- 17 inclusive of the RFI. And the team has done a
- 18 tremendous job of shepherding it with multiple
- 19 stakeholders and several different types of
- 20 questions that they've had to answer, financial,
- 21 environmental, political, you name it. And
- 22 they've done a phenomenal job. And I think as
- 23 both Damon and Carl mentioned, this is a
- 24 testament to what we can do in adding value and

Chicago Infrastructure Trust Meeting - February 7, 2017

- 1 capacity to any complicated process like this.
- One request that I would make of the
- 3 board and advisory board members, we didn't spend
- 4 a lot of time on project pipeline today. And
- 5 part of that is because this process has taken
- 6 quite of a bit of resource from the team.
- 7 And now that we're at this juncture,
- 8 Leslie and the team and all of us I think are at
- 9 an appropriate time to refocus our efforts on
- 10 what is next and be as thoughtful and creative
- 11 and innovative as possible.
- 12 And one thing that Leslie mentioned,
- 13 which I think should be a good guide for us, is
- 14 we'll all be thinking about value add, but also
- 15 revenue generating. And that we will have by
- 16 virtue of what our budget versus actual has been
- 17 some resources to invest and to invest in things
- 18 that can ultimately create opportunities for us
- 19 to be innovative.
- 20 The thing that I would ask all of you
- 21 is to be thinking about those things and be as
- 22 creative and innovative as possible. And in as
- 23 much as you can, give some individual time to
- 24 Leslie and Tom and George and the team.

## Chicago Infrastructure Trust Meeting - February 7, 2017

1	And	what	I've	found	personally	y is	that

- 2 it's productive, you know, spending some time in
- 3 a room and letting, you know, kind of your
- 4 thoughts fly, thinking about best practices and
- 5 things that you've seen or things that you don't
- 6 know where it may exist or where the right home
- 7 for it may be; but it's something that you think
- 8 the City needs and would benefit from. If
- 9 nothing else let's entertain that conversation.
- 10 And what I would encourage all of us
- 11 to do is to have that discussion with Leslie and
- 12 the team between now and the next board meeting.
- 13 With that I'm happy to entertain a
- 14 motion to adjourn.
- 15 MS. CAFARO: I'll move it.
- 16 CHAIRMAN SUMMERS: Moved by Miss Cafaro.
- 17 Seconded by Mr. O'Shea. All in favor?
- 18 (Chorus of ayes.)
- 19 CHAIRMAN SUMMERS: We're adjourned.
- 20 (Whereupon the meeting
- 21 adjourned at 11:45 a.m.)

22

23

24

1	STATE OF ILLINOIS )
2	) SS:
3	COUNTY OF L A K E )
4	
5	Julie Walsh, being first duly sworn,
6	on oath says that she is a court reporter doing
7	business in the City of Chicago; and that she
8	reported in shorthand the proceedings of said
9	meeting on February 7, 2017, and that the
10	foregoing is a true and correct transcript of her
11	shorthand notes so taken as aforesaid, and
12	contains the proceedings given at said meeting.
13	
14	
15	
16	
17	Certified Shorthand Reporter
18	
19	
20	
21	
22	
23	
24	

			T	1 columny 7, 201
	across (4)	15:14;77:16	74:15	and/or (1)
\$	19:18;39:14;42:5;	advantage (4)	Air (2)	42:23
Φ	52:21	56:24;77:16;82:2,3	27:20;31:1	announced (1)
\$10,000 (1)	act (1)	advertisement (1)	alcohol (1)	35:14
68:15	11:3	34:20	68:5	ANSI (1)
\$100 (1)	action (1)	advertising (1)	Alderman (10)	75:12
76:12	57:14	35:2	2:15;20:11;22:21;	Anthony (1)
\$220,000 (1)	actual (4)	advice (2)	23:2;43:9;44:5;54:11,	72:19
55:16	19:2;31:9;72:1;	4:16;46:23	12;56:11,11	anticipate (1)
\$23 (1)	83:16	advisor (3)	aldermanic (1)	32:12
54:18	actually (15)	30:6;48:7,8	58:4	anticipated (2)
<b>\$6</b> (1)	2:11;23:12,17;	advisors (7)	Alderman's (1)	9:19;15:5
76:9	32:18;39:8;57:18;	38:10,16;46:11,14,	22:20	anticipating (1)
\$70,000 (2)	60:10;64:18,21,24;	15;48:12;75:14	Aldermen (4)	77:13
55:17;58:9	65:1;73:7,24;77:8,12	advisory (2)	21:11;24:14;33:11;	<b>APB</b> (1)
\$8,000 (3)	actuals (2)	4:16;83:3	34:22	44:20
56:5,5;58:7	6:17;7:7	advocate (1)	aligns (1)	applicable (1)
	adapt (2)	74:11	10:10	58:11
$\mathbf{A}$	65:15;78:11	advocates (1)	allow (1)	applications (1)
	adaptability (1)	70:23	19:23	26:5
abide (1)	28:6	affixing (1)	allowed (2)	applies (1) 55:22
51:17	adapted (1) 65:8	42:6 <b>afford (3)</b>	14:12;78:23 <b>allowing (1)</b>	apply (3)
ability (15)	add (6)	20:9;39:6;49:2	3:8	22:16;27:11;56:8
16:13,20;18:18;	7:12;16:12;21:21;	afforded (1)	allows (2)	appreciate (7)
21:21;25:22;27:9,11;	59:1;80:1;83:14	42:1	25:19;77:23	3:7,8;5:11;54:1;
42:3,8;68:5;77:8;	added (6)	affords (1)	almost (4)	75:1;76:23;81:15
78:4,7,10;82:3	14:1;17:17,18;	78:7	37:19;39:5;54:20;	appreciation (2)
able (27)	18:24;36:22;37:1	AFFRUNTI (1)	66:10	3:24;81:2
5:4,8;6:6;10:23,24; 11:7;13:16;14:10;	adding (1)	34:17	alone (1)	appreciative (2)
15:1;17:24;20:16,20;	82:24	aficionado (1)	57:12	3:4;81:11
23:9;26:19,19;31:20;	addition (7)	52:19	along (1)	apprentice (1)
38:16,17;41:3;49:16;	12:5;16:11;19:11;	aforesaid (1)	13:8	51:15
51:19;52:19;68:6;	38:7;40:2;59:15;	85:11	alternative (1)	approach (5)
72:3,13;82:1,10	76:17	<b>Again</b> (10)	11:5	28:4;31:8;41:11;
above (2)	additional (7)	11:5,14;14:17;	although (2)	56:20,21
79:2,4	7:11;35:5;36:24;	36:18;58:7;67:2;75:9,	65:11;73:8	approaching (1)
absolute (1)	49:15,20;61:20,24	19,24;79:19	aluminum (1)	57:18
72:17	add-on (1)	agencies (2)	33:19	appropriate (3)
absolutely (4)	26:15	6:12;10:17	always (5)	8:9;22:13;83:9
11:6;44:5;50:7;	address (2) 43:4;78:13	<b>agency (1)</b> 60:9	3:4;35:3;36:21; 54:4;62:20	approval (3) 2:8;6:2,15
58:6	addressed (2)	agenda (1)	AMA (4)	approve (2)
accelerate (1)	31:2;80:24	53:24	65:17;66:14;79:6;	2:12;7:15
57:19	addressing (1)	aggregated (1)	81:22	approved (1)
accept (2)	71:11	11:17	amateur (1)	54:7
47:16,17	adjourn (2)	aggregating (1)	63:19	approximate (1)
access (1) 25:14	80:22;84:14	47:8	amazing (1)	40:11
accomplish (2)	adjourned (2)	aggression (3)	73:14	approximately (1)
14:10;75:17	84:19,21	68:4;69:12,13	amber (6)	11:24
accomplished (1)	adjust (1)	aggressive (3)	69:18;70:2;75:18,	apps (1)
14:19	78:10	13:15;45:20;59:9	23;76:4,9	44:21
accomplishment (1)	adjustments (2)	aging (1)	American (2)	April (2)
53:5	72:3,14	15:13	65:17,21	11:22;13:22
account (3)	administers (1)	ago (1)	amiss (1)	area (6)
71:1,2,8	60:9	35:15	3:14	16:22;34:22;54:5;
accurate (3)	admission (1)	agree (1)	amount (7)	64:22;65:8,14
19:5,6,9	66:18	51:17	7:8;8:1,2,19;13:6;	areas (5)
achieve (4)	adopted (1)	agreed (3)	59:22;62:14	37:8;42:18;50:20;
13:16;17:24;20:2;	56:23	37:21,23;50:13	amplify (1)	72:5;73:19
73:15	advancement (1) 18:20	ahead (3) 35:1;41:18;62:17	50:3	<b>around (4)</b> 12:19;52:9;76:5;
achievements (1)	advancements (2)		analysis (3) 7:3,3;28:20	80:18
73:9	auvancements (2)	aim (1)	1.3,3,20.20	00.10
		·	-	

				rebluary 7, 201
arterial (2)	ayes (4)	best (17)	67:17,18	18:8;77:6
39:12,13	2:17;9:12;53:19;	15:15;35:21;40:24,	brainstorming (1)	Buyer's (3)
aside (1)	84:18	24;47:11;48:16,18;	62:16	7:23;54:3,6
76:1	D	53:3;69:16,16;71:17;	breaker (1)	buying (3)
aspects (1)	В	72:17;74:14;75:23;	16:22	18:13;54:4;55:9
76:22	h l- (14)	79:15;81:21;84:4	breast (1) 68:2	C
assessment (4)	back (14)	<b>better (17)</b> 16:14;17:2;18:3,15,	08:2 breath (1)	C
19:13,19;20:18; 51:5	3:19;10:4,8;11:22; 12:7;19:1,19;29:3,11;	16;22:14;24:8;32:23;	45:14	cables (1)
asset (3)	31:8;33:18;36:8;	38:1;40:18;42:10;	brief (2)	29:14
19:19;20:18;51:5	61:19;65:14	46:18;49:12,13;	3:11;15:8	CAFARO (9)
assets (2)	backed (1)	57:11;66:20;75:1	briefing (1)	2:14,16;9:9,10;
17:2;62:2	9:4	beyond (1)	52:14	57:15,22;58:5;84:15,
assist (1)	backhoe (1)	30:15	briefly (2)	16
59:20	52:17	bid (1)	38:13;67:15	calendar (3)
assistance (6)	backing (1)	40:23	bright (6)	2:21,24;5:9
4:16;5:15,18;7:24;	59:19	big (3)	64:13;72:9;73:19;	call (2)
54:3,6	backup (1)	9:21;17:8;33:9	74:1,2;77:21	2:4;16:16
assisted (2)	59:19	biggest (2)	brightest (1)	came (4)
10:14;75:14	<b>bad</b> (1)	9:18;44:19	63:23	15:24;39:9;46:7;
associate (1)	64:18	bill (1)	brightly (1)	81:1
4:22	balance (2)	76:10	63:21	cameras (1)
associated (1)	76:16;81:6	birds (1)	bring (6)	76:20
55:7	balancing (1)	69:10	6:6;9:22;10:23;	can (53)
<b>Association (4)</b> 59:2;65:17,21,23	75:17	<b>bit (18)</b> 12:8;13:13;14:20;	17:5;30:6;34:2 <b>bringing (1)</b>	6:21;8:13;10:11;
Association's (1)	<b>bandwidth (2)</b> 29:12;35:6	15:3,5;17:17;25:2;	6:1	12:7;13:22;15:11; 20:2,9,20;23:17;25:1;
81:23	Bank (1)	26:13,14;34:18;39:2,	broad (1)	27:16,19;28:16;30:1;
assume (1)	59:23	14;45:12;50:4;60:8;	46:11	31:16;32:8;33:2,11;
34:5	banners (2)	61:12;66:6;83:6	broadband (1)	36:3,4,13,21;37:1,18;
assuming (1)	34:23;35:2	blast (1)	29:10	43:5;46:2,9;50:9;
76:13	Barnaby (1)	59:3	broader (1)	52:9;59:20;60:16,21;
assure (1)	70:13	blue (11)	62:23	61:22;62:13;63:22;
80:10	Barrett (3)	65:4,6,9,16;67:18,	broadly (1)	64:10;67:3,5;68:17,
astounding (1)	3:6;59:13;61:1	19,20;68:1;69:21,22;	30:2	18,23;69:11,12,19;
38:24	base (2)	72:9	BUDESCU (6)	71:19;72:1,12;78:12;
astronomer (1)	14:24;15:5	board (18)	46:3;51:3,7,14,22;	79:15;82:24;83:18,23
63:19	based (2)	2:21,23;4:15,16;	52:3	cancer (1)
attend (1)	45:1;72:24	5:3;6:1,7,18;8:11;	budget (8)	67:13
63:18	basically (2)	10:1;30:5;62:22;	6:9,13,16,22;7:6, 16;9:7;83:16	cancers (1)
attention (2) 59:22;60:12	22:5;27:18 beach (1)	63:16;70:17;72:22; 83:3,3;84:12	budgetary (1)	68:3 capabilities (8)
attest (1)	64:3	bone (1)	10:21	17:19;28:22,23;
33:11	beautiful (1)	68:2	budgeted (1)	34:19;41:5,21;44:2,2
attract (1)	73:14	bono (1)	7:7	capability (3)
5:6	beauty (3)	5:15	build (1)	35:15;36:15;54:24
auditors (1)	26:1;28:4;77:3	border (1)	34:3	capable (1)
6:3	become (7)	37:9	built (6)	62:7
audits (1)	11:12;26:2,24;27:3;	borrowers (1)	31:6;34:6,14;77:7,	capacity (3)
6:5	28:9;33:4;59:8	54:21	17,22	10:15;26:2;83:1
automated (1)	begin (1)	both (15)	built-in (1)	capital (2)
16:20	49:24	6:18;10:10;14:8;	77:11	31:7,11
available (9)	behind (1)	22:10;31:15;32:1,9;	bulb (2)	car (1)
7:18;28:9;56:15;	74:6	36:8;40:13;54:11;	32:18,24	74:5
59:10,24;76:1,2;	below (1)	59:23;61:6;65:24;	bunch (1)	care (1)
80:13;82:12	66:22	82:3,23 hottom (1)	38:21	76:7
average (7)	beneficial (2)	<b>bottom (1)</b> 37:10	burned (2)	Carl (1)
55:15,16;56:4;58:7, 9;78:5;79:14	62:15;72:11 benefit (4)	37:10 Bowl (1)	32:19;78:1 business (2)	82:23
9,78.3,79.14 aware (2)	38:7;42:24;57:13;	57:20	12:17;85:7	cars (1) 27:13
42:15;59:5	84:8	box (1)	busy (1)	case (4)
away (4)	benefits (5)	10:19	3:22	31:1;35:23;36:5;
63:21;70:1,2;79:21	5:2,4,8,10;11:21	brain (2)	buy (2)	60:7
		·- · \—/		

cases (3)	42:11;45:1;49:11;	clearer (1)	62:24	consideration (5)
23:22;39:16,20	50:15;51:12;53:12;	60:21	company (1)	52:5;61:24;76:14,
causing (1)	54:5;55:20;57:16;	clearly (2)	19:2	15;81:4
69:9	59:5;64:1,4,7,12;	39:21;41:17	compatible (2)	consistent (1)
CCA (1)	68:16;71:19;72:18;	closed (4)	42:12;43:19	78:7
10:6	73:13;74:8,14;76:9;	54:8,19;55:14;56:7	competitive (4)	consistently (2)
CDOT (4)	78:11;81:10,15;85:7	closely (2)	5:6;14:18;17:23;	42:14;62:1
19:23;32:3;33:5;	Chicagoans (1)	40:11;43:2	59:11	constituents (1)
43:2	81:7	clue (1)	complement (1)	54:13
CDOT's (1)	Chorus (4)	67:5	30:2	constraint (1)
25:15	2:17;9:12;53:19;	coach (1)	complementary (1)	79:16
census (1)	84:18	12:15	10:13	constraints (1)
48:18				` ,
	chose (1)	Cobra (3)	complete (2)	30:12
central (3)	16:5	12:14;13:3;16:8	7:2;19:19	construction (1)
12:16;25:14,15	chosen (1)	codes (1)	completed (1)	71:22
centralized (1)	74:12	75:11	81:18	contains (1)
12:3	Christmas (1)	collaboration (1)	complex (1)	85:12
certain (1)	68:15	70:18	52:22	content (3)
34:19	CIO (1)	colleagues (2)	complexity (1)	65:4,6,16
certainly (3)	42:15	56:10,12	53:2	context (4)
8:14;42:22;82:6	circling (1)	College (1)	complicated (1)	22:8,13,15,17
Certified (1)	61:19	51:12	83:1	contexts (1)
85:17	circuit (1)	color (6)	composed (1)	22:10
CHAIRMAN (62)	25:10	65:24;66:22;71:3,	46:10	continual (3)
2:3,15,18,20;8:8;	CIT (3)	15;75:20;76:21	comprehensive (3)	23:23;24:1;33:7
9:3,9,10,13,15;13:5;	3:23;5:5;47:23	colors (2)	19:12;45:21,21	continue (14)
22:19;23:2;24:17;	citizens (8)	37:24;68:17	comprised (1)	5:6,17;6:9;14:2;
27:24;28:18;30:1;	16:14,16;21:5;	combat (1)	16:2	23:3;40:4;44:6;54:16
31:23;33:16;34:16;	33:11;39:6;75:2;	43:23	concept (1)	61:4,9,12;62:13;
35:11,14;37:3;43:4;	78:11;81:15	coming (8)	40:13	79:18;81:19
44:19;50:2;52:7,11,	City (81)	7:12;33:20,21;	concern (3)	continued (3)
16;53:6,16,20,22;	6:11,23;7:4;8:22;	34:12;46:6;47:5;	33:10;43:5;44:19	5:15;6:10,22
55:2;57:6,10,15,21;	10:14,16;11:16,21;	62:17;75:2	concerned (1)	continues (1)
58:1,6;59:12;60:2;	12:4,13,20;13:7;14:8;	comings (1)	75:2	82:5
61:2;62:11;63:6;66:1,	15:12,17,19;16:18;	62:20	conclusion (1)	continuing (3)
4,23;67:2,7;70:5,9,13,	19:18;23:23;25:1;	commenced (1)	66:16	54:24;61:14,17
15;71:9;72:19;74:18;	26:5,8,17,19;27:12;	2:2	condition (4)	contract (7)
79:24;80:12;82:15;	28:9;29:23;31:8,10;	comment (7)	17:2;19:12,16;51:5	14:16;36:16,17;
84:16,19	32:3;33:8;34:9;35:3,	39:7;63:7,8;74:21;	conducted (1)	40:23;61:6,10;82:2
challenge (2)	8,12;36:21;37:2,6,8;	80:21;81:1,2	47:23	contrast (2)
30:10;33:7	38:22;42:5,10;43:21;	comments (7)	confidence (1)	64:22;65:6
chance (3)	44:10;46:16;47:12;	57:23;64:14;66:2;	26:7	contributing (2)
6:19;33:15;69:15	49:13,23;50:14,21,23;	67:3;71:11;80:15;	confident (1)	64:6,7
		81:16	14:24	control (6)
change (7)	53:12;58:2;59:5;61:8,			
13:1;19:7;28:16;	18;62:2,3,8,13;63:13,	commercially (2)	confined (1)	12:2;16:21;21:20,
71:23;79:12;81:9,11	15,16,24;64:4,7,12;	28:3,7	22:6	21;25:23;68:6
changers (1)	66:8;69:14,16;70:23;	Commission (2)	confirmation (3)	conversation (4)
32:24	71:14,17;73:14;76:9;	3:6;63:15	17:14;18:3;40:13	30:9;70:22;71:5;
changes (1)	77:15;79:22;81:10,	commitment (5)	confusion (1)	84:9
<b>O</b> , ,			, ,	
2:24	14;84:8;85:7	41:15;42:21;44:6;	20:23	conversations (1)
changing (2)	City's (6)	51:18;52:4	conjunction (6)	42:20
22:22;77:11	10:13;11:24;41:13;	committee (17)	23:10;24:18,19;	conversion (8)
cheaper (2)	50:18;51:23;54:8	46:12,13,18;47:6,7,	34:21;41:12;60:17	13:6;15:4;20:13;
			1	
18:8,14	claim (1)	14;48:4,10,11,15,18,	connect (1)	21:2,18;22:22;23:10
check (2)	73:23	20,22,24;49:2,3;59:3	20:16	36:17
29:20;32:17	claims (1)	communicate (2)	consensus (3)	conversions (3)
checked (1)	73:1	18:18;20:20	47:10;48:15,16	13:9;16:6;21:6
, ,				
10:19	clarify (1)	communicated (2)	consequential (1)	convert (2)
Chicago (39)	21:1	25:12,14	31:14	16:9;20:14
5:15;6:11;15:12,17;	clarifying (2)	communication (1)	consider (1)	converted (1)
16:19;17:22;18:21,	22:19;30:1	29:7	45:8	42:9
22;22:9;23:19;30:15;	clear (1)	Community (4)	considerably (1)	converting (1)
	13:20			
31:16;32:3;41:23;	13.20	51:12;54:15,16;	7:5	11:24

				1 001 441 7 7, 201
Cook (1)	16:1,16;73:12	72:18	32:23	disassembled (1)
59:22	current (3)	decisions (1)	designed (4)	34:13
cooler (1)	4:19;76:3,12	24:15	22:18;24:4,5,12	discuss (2)
21:24	currently (2)	decorative (1)	desired (1)	15:3;45:18
coordinate (1)	20:15;35:6	12:16	37:2	discussed (1)
53:1	cut (1)	decreases (1)	detail (2)	40:22
coordinating (1)	73:3	82:4	4:5;47:21	Discussion (2)
61:19	cutoff (2)	dedicated (6)	determination (2)	63:10;84:11
copy (1)	74:15;78:20	11:4;25:4,24;30:17;	41:1;48:19	disorders (3)
53:7	cycle (1)	53:1;58:15	determine (1)	68:4,6,7
CORNEL (1)	56:16	dedication (1)	69:1	disperse (1)
70:12		67:13	developed (1)	79:9
cost (12)	D	defined (4)	30:21	dispersion (1)
7:10;13:1;16:5;		22:3,8,14;46:6	development (7)	79:14
27:23;31:7,10,11;	damage (1)	definition (1)	41:16;47:3,4;50:5,	disposal (1)
33:24;35:17;65:12;	65:13	60:22	20;52:6;61:16	34:8
77:11,13	dammit (1)	degree (2)	devices (1)	distance (1)
costs (3)	69:15	71:2,7	27:8	63:24
11:1;43:21;71:23	Damon (2)	deliberately (1)	different (20)	distinguish (1)
COT (1)	36:9;82:23	69:12	12:23;21:16,19;	37:24
25:19	Damon's (1)	deliver (5)	22:11,12;35:7;36:16;	distributing (1)
council (1)	52:18	14:17;15:1,16;	37:9;38:23;39:3,10;	29:9
43:11	dark (8)	16:14;79:14	44:14;58:3;60:20;	distribution (2)
counseling (1)	27:12;64:23;65:8,	delivered (3)	65:10;66:12;68:12,	22:2;39:18
59:17	22;73:18,19;79:6;	4:7;14:22;33:12	17;79:8;82:19	district (5)
country (1)	81:23	delivering (3)	difficult (2)	12:17;41:24;42:1;
31:22	darker (2)	78:2;81:14,20	56:7;64:24	44:13;66:13
County (2)	65:14;69:2	delivery (2)	diffusing (2)	dive (1)
59:22;85:3	darkest (1)	10:18;11:5	73:20;74:13	9:20
couple (4)	63:22	demand (2)	diffusion (1)	Divvy (1)
4:22;18:5;31:24;	DARLING (35)	58:23;60:15	78:13	36:3
81:21	2:22;7:20,23;8:4;	demo (3)	digital (1)	document (3)
course (1)	9:21;12:11;13:12;	64:16;66:17,21	35:2	10:7;34:1,8
62:23	26:24;35:2,13;36:8;	demonstrate (1)	dilemma (1)	documents (3)
court (1)	37:5;40:20;41:20;	40:8	41:23	52:12,14;69:20
85:6 covered (2)	42:13;44:5,23;45:5;	demonstrated (2) 40:6;78:22	<b>diligent (1)</b> 4:10	dollar (3) 33:23;43:18,18
2:6;65:5	49:5;50:7,9;51:6,11, 16;52:2,10,13;53:23;	demonstrates (1)	diligently (1)	dollars (1)
CPD (7)	58:24;61:4;63:1,5,9;	52:24	5:23	54:20
42:11,13;43:2,9;	74:22;80:23	demonstrating (1)	dim (2)	dome (1)
44:8,13,17	data (5)	40:19	25:20;78:4	64:7
CPS (1)	26:4;29:2,15,18;	demonstration (3)	dimmable (3)	Dominguez (1)
51:8	73:9	37:7,8;48:5	18:17;40:8;77:22	3:15
craft (1)	dates (1)	demonstrations (5)	dimming (1)	donated (1)
49:9	2:23	37:4;39:2,5;40:2;	44:1	67:10
create (3)	day (5)	77:20	directed (1)	done (15)
49:6,15;83:18	19:7;35:10;37:13;	Department (2)	79:7	4:2;5:21;7:1;10:14;
created (3)	67:16;78:2	50:19;63:3	direction (1)	12:9;14:15;21:13;
30:22;32:11;50:19	days (1)	departments (1)	28:19	25:23;60:16;72:23;
creative (3)	19:18	44:10	directionally (1)	79:22;80:14;81:17;
58:14;83:10,22	daytime (1)	deploy (1)	9:6	82:17,22
credit (3)	67:19	79:23	directly (1)	down (11)
52:22;55:17;58:10	deal (4)	deployed (3)	39:23	14:2;15:21;16:19;
crews (1)	4:6;38:9;79:22;	33:2;77:3;82:11	director (1)	18:12;33:20,21;
33:6	81:18	deploying (1)	47:18	67:21;71:23;77:14;
crime (1)	death (2)	32:14	disadvantage (1)	79:7;80:6
76:18	3:16;68:22	depth (1)	65:1	downside (1)
crisp (2)	December (1)	45:14	disadvantaged (1)	75:22
73:7,8	3:3	describing (1)	50:17	downward (1)
criteria (4)	decide (1)	29:1	disappear (1)	74:16
41:1;47:24;50:5;	68:22	design (3)	64:3	Drive (4)
52:9	decision (4)	13:18;73:16;74:12	disappointed (1)	12:19;13:8;54:24;
critical (3)	31:7;35:19;48:16;	designated (1)	73:6	58:23
-	1		1	1

	1			10014413 ., 201.
driven (1)	33:4;65:12	11:11;28:7	existing (2)	73:24
60:5	effort (1)	espousing (1)	17:4;28:11	
drivers (2)	72:17	27:7	ex-offender (1)	${f F}$
18:17;77:22	efforts (3)	essentially (5)	51:14	
driving (3)	10:3;70:17;83:9	25:5,9;27:7;46:15;	expand (1)	<b>fact</b> (7)
60:14;74:4,7	either (5)	47:8	35:21	3:13;31:21;58:10;
drugs (1)	25:10;35:23;36:5;	estimates (1)	expanded (1)	66:15;72:24;74:1;
68:5	47:16;51:8	33:19	10:15	77:2
due (1)	electric (2)	euphemism (1)	expands (1)	factors (1)
37:13	76:10,13	55:24	7:11	65:4
dug (1)	electricity (1)	evaluate (1)	expect (8)	fail (2)
15:21	16:11	47:4	3:1;14:14;20:6;	24:9;73:11
duly (1)	element (3)	evaluating (1)	24:2;54:18;61:8,12;	failure (1)
85:5	73:12,21;74:13	46:19	78:6	24:7
Dunes (4)	elements (1)	evaluation (21)	expectation (1)	fair (1)
63:20;64:4,8,11	16:1	40:21,24;45:9,18,	29:12	59:22
durability (1)	eliminate (1)	19,22;46:5,10,12,18;	expectations (1)	fairly (2)
32:15	64:12	47:6,21;48:4,10,11,	13:21	15:8;19:5
duration (1)	else (4)	15,18,20,24;49:3;52:5	expected (1)	fairs (1)
78:6	18:4;23:14;80:20;	even (10)	10:24	58:3
During (1)	84:9	17:16;18:9,22;	expediently (1)	Falk (1)
64:2	e-mail (1)	39:18;56:1,18;57:12;	14:13	5:13
	37:17	62:13;69:10;76:13	expense (1)	familiar (1)
${f E}$	embark (1)	events (2)	8:19	60:4
	37:6	54:11,12	expenses (1)	families (2)
earlier (2)	employee (1)	evergreen (1)	6:10	55:20;58:8
52:18;78:14	5:19	8:15	expensive (1)	family (5)
	employees (4)	everybody (1)	7:5	3:16,18,20;55:16;
early (2)		44:20		58:9
31:6;57:14	4:20,21;5:5,11		experience (2)	
easier (1)	employment (1) 32:2	everybody's (1) 27:7	38:20;41:15	far (4)
37:24			experiencing (1) 41:23	32:10;55:14;66:22;
easiest (1)	enabled (1)	everyone (8)		78:21
69:1	26:16	2:10;4:12;38:21;	expert (5)	fascinating (1)
easily (1)	encourage (2)	53:6;70:16,20;71:18;	11:13;27:1,4;64:19;	38:20
63:22	71:20;84:10	80:17	75:9	fast (1)
east (1)	encouragement (1)	everywhere (1)	expertise (4)	46:8
51:1	51:23	58:12	11:10;30:21;31:13;	favor (4)
echo (1)	end (6)	evident (2)	46:17	2:16;9:11;53:18;
81:2	38:5;39:3;40:18,18;	27:3;31:13	Experts (4)	84:17
economic (1)	80:10,11	exactly (2)	61:1,2;64:20;68:14	feasibility (1)
41:16	ended (2)	10:23;30:8	explain (3)	7:3
economical (1)	39:3;49:18	example (10)	25:2;26:14;50:4	feasible (1)
6:24	endless (1)	11:7;12:19;13:8;	explore (1)	15:22
economically (3)	3:7	30:22;35:20;36:10;	61:15	February (2)
16:6;26:3;50:17	energy (4)	64:3;71:18;75:16,18	explored (2)	57:15;85:9
economies (1)	16:4;49:12;61:20;	examples (1)	42:11;43:22	fee (2)
18:7	63:3	18:6	exploring (1)	8:6,24
ecosystems (1)	engage (1)	exceed (1)	43:19	feedback (9)
68:9	14:3	51:19	express (2)	37:12,15,15,18;
EEO (2)	enhance (1)	exceeded (1)	3:24;31:19	38:8;40:3;47:8;48:9;
50:18;52:1	28:11	50:10	expressing (1)	56:22
effect (1)	enough (3)	exceeds (1)	75:3	feeding (1)
65:11	5:13;37:21;75:10	8:1	extend (1)	29:2
effective (4)	entertain (7)	excited (1)	17:4	feel (7)
13:1;16:5;35:18;	2:11;7:14;9:8;46:2;	9:22	extent (1)	6:22;10:19,21;
65:12	53:14;84:9,13	exclusive (2)	49:16	42:23;45:13;62:14;
effectively (1)	entire (3)	60:16,23	extraordinarily (1)	72:10
56:6	23:15;70:2;78:8	executed (1)	81:5	feet (2)
effectiveness (1)	environmental (1)	61:10	extremely (1)	79:3,4
76:20	82:21	executive (2)	3:22	fellow (1)
effects (2)	equal (1)	47:18;74:19	eye (1)	4:23
65:16;69:24	39:12	exist (2)	8:12	felt (2)
efficient (2)	especially (2)	13:9;84:6	eyes (1)	33:24;37:20
	especially (2)	13.7,04.0	cycs (1)	33.47,37.40

	T	I	T	10014415 7,2017
female (1)	focus (2)	26:3,11,17;28:6;	grid (2)	height (1)
51:24	6:10;31:13	36:22,23;62:3;75:13	20:19;36:2	79:16
festival (1)	focussed (1)		ground (1)	heights (1)
34:22	30:23	G	16:22	22:11
few (4)	focussing (1)		group (2)	Hello (1)
3:14,23;4:3,21	13:2	gave (2)	32:22;46:15	72:21
fiberoptic (1)	folks (2)	17:19;34:2	groups (1)	help (5)
29:14	56:8;60:24	gear (1)	46:11	43:20;56:9,10;
field (1)	follow (1)	55:8	guarantee (1)	58:16;61:3
38:11	35:8	generally (1)	43:16	helped (3)
figure (3)	following (1)	22:4	guess (1)	10:6;47:2,3
8:21;30:18;79:13	81:21	generate (2)	18:24	helpful (5)
Figuring (1)	foregoing (1)	8:13;33:5	guide (1)	6:5;38:9;58:20;
56:12	85:10	generated (1)	83:13	59:20;60:23
final (4)	forever (1)	8:20	guiding (1)	helping (1)
48:17,18;66:18,21	24:3	generating (2)	10:12	5:23
finalists (5)	form (1)	35:18;83:15	guys (2)	Hi (1)
49:23;50:10,12;	36:2	gentleman (1)	38:22;55:4	72:21
53:10,13	forms (2)	78:13	TT	high (8)
finally (1)	35:20;75:7	George (16)	H	12:23;20:3,4,5,8;
48:17	forth (6)	4:12;11:11;15:2;	//	69:13;75:20;76:18
financial (4)	19:1;33:18;50:11,	27:24;36:13;38:13;	hands (1)	higher (1)
7:3;17:12;30:18;	18;73:11;75:2	40:20;41:3;49:8;	5:22	68:2
82:20	forward (21)	74:20,23;78:12;	hanging (1)	highest (1)
financing (1)	4:23;5:4,24;23:9;	80:13,23;81:17;83:24	34:23	65:21
31:9	24:14;33:1;34:18;	George's (1)	happen (1)	high-level (1)
find (1)	37:3;53:10,12;54:5,9,	30:20	35:16	49:8
73:23	23;62:8,9,15,19;73:3;	gets (3)	happens (1) 24:17	Hilda (1) 6:4
<b>firm (1)</b> 28:14	77:18;82:6,13	25:14;34:9;78:24		hired (1)
firms (1)	<b>found (2)</b> 14:6;84:1	given (5)	happy (6)	51:4
14:3	four (3)	15:9;49:8;52:4; 79:15;85:12	7:14;9:8;49:20; 51:2;53:14;84:13	hires (1)
First (11)	4:19;77:7,14	gives (2)	hard (3)	7:9
3:12,23;32:17;	four-phase (1)	16:13;25:17	36:23;44:12;72:22	history (1)
36:19;50:9;51:7;61:7;	47:21	glare (2)	hardest (1)	67:13
68:22;74:24;82:1;	Franklin (1)	39:19;73:3	60:5	hit (1)
85:5	66:9	glow (2)	Harris (3)	60:5
fiscal (3)	Fredop (1)	64:6,8	72:20,21;74:18	hold (2)
6:16;30:12;43:1	55:11	goal (3)	harsh (2)	3:8;58:4
Fischer (5)	free (2)	46:8;73:15;81:13	73:8;77:22	Home (10)
67:2,5,8;70:5,7	32:16;56:6	goals (3)	hazardous (1)	7:23;8:21;9:3;54:3,
fits (1)	freed (1)	11:23;15:1;51:24	34:9	4,6;55:9,15;57:13;
11:19	32:20	goes (3)	head (3)	84:6
fix (1)	<b>full</b> (4)	20:18;27:21;34:14	12:14;13:3;55:13	homes (2)
69:16	58:8;66:19;74:15;	good (16)	headlights (1)	42:6;59:23
fixed (1)	78:20	5:10;8:23;18:1;	74:5	hope (5)
57:5	full-time (2)	20:9;21:21;26:7;28:2;	heads (5)	4:8;7:12;11:20;
fixture (11)	4:20;32:13	32:9;33:14;40:19;	12:23;16:8;23:15;	71:13;72:17
13:4;18:19;21:3;	fully (2)	54:22;55:23;64:17;	33:20;42:9	hopefully (4)
41:4,7,9;73:10;77:18;	24:16;78:19	77:19;80:14;83:13	health (4)	22:16;26:11;32:24;
79:2,3,13	function (1)	grant (6)	5:2;67:14,23;72:11	72:1
fixtures (22)	24:10	7:7,18;8:1,2;56:4;	healthier (1)	hoping (4)
12:1;18:8,15,15,16,	functionalities (1)	58:7	70:8	7:8,10;54:14;77:4
16;20:3,8,16;22:13;	37:1	grateful (1)	hear (2)	horizon (1)
24:23;38:5;40:7,10;	functionality (3)	5:17	4:8;43:9	79:2
42:24;73:16,20;	17:18;36:20;41:10	<b>Great (16)</b>	heard (3)	hospitality (1)
74:10;77:9,11,13,23	funds (1)	2:7;4:6;6:11;10:2;	43:8;44:23;74:21	3:7
flashlight (1)	62:12	11:1,6,21;12:11;	Hearing (2)	host (2)
63:23	further (5)	20:22;28:14;38:9;	2:20;62:22	76:16;77:1
flexibility (3)	25:2;28:10,24;	39:19;49:23;62:21;	heart (1)	hosted (1)
17:20;28:6;77:17	55:19;56:18	74:6;81:14	67:9	54:12
fly (1)	future (11)	greater (2)	heck (1)	hosts (1)
84:4	15:23;17:20;19:7;	28:1;76:19	68:20	3:5
-	II.	1	I .	I .

				rebluary 1, 2011
hours (2)	important (4)	5:16;8:22;12:6;	48:13;77:21	Jorge (1)
50:14;67:11	30:16;41:5;55:5;	15:13;17:3,5;19:10;	interprets (1)	55:11
house (1)	59:15	22:23;23:7;30:7,9;	67:18	Julie (1)
39:23	improve (1)	33:8;35:5,20,24;36:7;	intersection (1)	85:5
housing (2)	49:10	37:17;47:19	66:9	jump (2)
59:16;60:20	improved (2)	ingredients (1)	into (33)	26:8;62:18
HUBBARD (10)	20:15;37:22	15:15	3:10;11:17;17:12,	juncture (1)
7:17,22;8:3;12:7;	inception (1)	initially (1)	20,21;19:7;21:22;	83:7
13:11;31:24;53:15,	5:16	15:18	24:21;29:3;34:3,6,15;	June (1)
16;57:1,9	include (1)	initiatives (1)	38:17;40:21;45:8,14;	3:1
hue (1)	13:6	41:17	50:20;64:23;65:8,14;	justifiable (2)
74:13	included (1)	innovation (1)	68:11;69:11,13;	16:6;26:3
humbly (1)	48:4	53:2	70:24;71:2,8;74:7;	justify (1)
74:11	including (4)	innovative (3)	77:5,17,22;78:16;	28:10
hurt (1)	4:13;7:2;42:17;	83:11,19,22	81:4;82:2	20110
73:24	54:10	in-person (1)	introduce (1)	K
		48:23	4:14	12
hurting (2)	inclusive (1)			
69:9,10	82:17	input (5)	introducing (1)	keep (7)
hurts (1)	income (3)	14:5;70:23;71:8,14,	4:24	3:17,20;5:5;15:7;
68:8	9:1;55:16;58:9	15	invaluable (1)	67:3;78:7;80:17
	incorrect (1)	insight (1)	4:17	keeping (2)
I	36:14	48:9	inventory (4)	82:7,13
	increase (4)	install (1)	16:7;18:19,20;19:3	Kelvin (10)
iceberg (2)	24:6;25:20;57:4;	17:7	invest (5)	21:23,24;65:18;
55:24;56:1	69:22	installation (2)	26:6;28:15;62:13;	66:13,22;69:23;71:3;
		32:2,11		
IDA (1)	increased (1)		83:17,17	76:6;80:3;81:24
60:9	68:2	installed (4)	investment (10)	Kenwood (1)
idea (3)	increases (2)	23:20;29:14;32:20;	8:15,21,23;24:1;	63:14
11:14;15:10;49:8	7:9;82:4	36:13	26:10;28:11;34:24;	key (2)
ideal (1)	increasing (5)	installing (2)	35:24;36:6;55:1	80:9,9
32:15	54:10,23;64:20,21;	21:18;40:18	investments (2)	kicked (1)
ideally (1)	65:2	Instead (1)	19:24;62:4	5:19
72:12	incredible (2)	34:23	involve (1)	kicking (1)
ideas (4)	13:19;70:18	instructing (1)	29:2	54:5
` ,	incredibly (5)	53:8	involved (6)	Kim (1)
28:14;62:11,22,23				
identical (1)	13:15;14:6;20:7;	Insuring (1)	45:22;61:5;67:8,9,	60:10
39:5	38:9;41:5	10:16	16;70:21	kind (30)
Illinois (2)	incremental (2)	integrated (1)	issue (4)	9:17;12:10,18;
59:2;85:1	35:24;36:6	21:22	33:6;43:23;60:19;	15:10,16,21;16:20,20;
illuminated (1)	incubation (1)	intended (1)	67:12	17:5;23:6,11;24:5;
64:23	11:15	39:1	issued (1)	25:13;30:6,22;31:6;
illumination (1)	independent (2)	intention (1)	13:22	33:6;34:2,7,10;36:4;
73:18	47:7;48:3	39:4	issues (4)	37:9;40:3,4;55:13;
immediate (1)	index (3)	interest (4)	42:18;67:14;69:9;	56:15,19;75:2,16;
57:24	68:24;69:1,4	13:20;53:4;56:18;	80:24	84:3
immediately (1)	Indiana (5)	57:4	items (1)	kinds (4)
67:21	63:13,20;64:4,8,10	interested (1)	45:11	15:20;27:16,20;
impact (1)	individual (3)	37:14	iterations (1)	44:21
32:1	42:8;63:17;83:23	interesting (1)	66:11	Kirkland (2)
impacted (1)	individual's (1)	25:4	iterative (1)	5:14,23
57:3	42:6	interests (1)	14:4	knew (3)
impermeability (1)	indulgence (1)	81:6		18:6,7,11
20:6	54:1	interferes (1)	J	Kristi (1)
implement (2)	inform (1)	65:7		55:3
	19:23	internal (1)	Innuary (2)	
38:17,17			January (2)	Kym (1)
implementation (3)	information (15)	40:14	5:8;14:14	12:11
36:11;41:12;61:7	12:4;16:15;17:2,10;	International (2)	job (4)	
implemented (1)	18:19;19:9;24:8,22;	65:22;81:23	47:15;80:14;82:18,	$\mathbf{L}$
82:9	25:11;27:9,16,20;	internet (2)	22	
implementing (1)	36:4;38:24;82:12	15:19;27:8	jobs (2)	LA (1)
			32:11;49:16	36:10
12:1	informed (1)	interns (1)	34.11,47.10	30.10
12:1	<b>informed (1)</b> 41:1	interns (1) 4:22		
	informed (1) 41:1 Infrastructure (18)	4:22 interpreting (2)	Jonathan (1) 42:15	labor (1) 7:10

lack (4)	23:23;66:10	12:3,10,12,13;13:2;	looked (3)	5:20,21
32:23;67:19,24;	lender (1)	18:23;19:13;21:5,15,	32:5;41:2;45:11	manufactured (1)
73:20	54:15	17;22:1,3,5,22;25:11,	looking (12)	75:24
lady (1)	lenders (4)	19,23;29:20;32:17;	8:7;41:11;50:6;	many (12)
70:24	54:7,14;57:7;58:20	37:24;38:23;39:16,	54:5,9,23;57:16;62:3,	7:17;18:23;23:22;
laid (1)	lenses (1)	21;44:1;46:9;64:12,	8,19;73:3;75:7	27:13,13;39:16;
41:17	79:8	16;65:9,20;73:2,11,	looks (2)	44:14;45:23;61:16;
Lake (2)	Leslie (14)	14,20,24;74:15;75:8,	8:11;64:5	74:3;77:20;81:7
13:8;69:2	8:16;12:7;35:1,17;		lot (29)	map (3)
		12,23;77:24;78:20,21,		
lamp (2)	40:6;46:3;57:3;60:19;	22;82:11	4:9,10;12:18;15:18,	50:18,24;51:2
12:23;13:3	74:19;80:20;83:8,12,	likely (1)	23;16:10;17:18,19,	markedly (1)
lamps (3)	24;84:11	35:23	20;19:22;20:23;	39:10
12:15,19;13:3	less (7)	limit (2)	28:13;29:18;31:5;	market (1)
Land (2)	33:1,1;65:18;67:4;	65:21;66:5	33:8;40:1;45:6;59:18;	17:13
59:23,23	76:2;78:2;81:13	limited (2)	60:19;61:3,23;72:9;	marketing (3)
large (2)	lesson (2)	33:13;79:9	73:23;75:7;76:22;	59:19;60:1;61:2
17:22;54:16	30:16;39:11	limitless (1)	78:16;82:7,12;83:4	Marquisos (21)
largely (5)	lessons (2)	27:22	love (2)	11:12;15:7;20:22;
13:16;17:22;22:6,	30:14;38:15	line (6)	39:17;56:22	21:9,11;23:1,18;
21;28:1	letting (1)	17:5;25:1;69:2;	low (4)	24:19;25:3;26:21;
larger (1)	84:3	71:23;75:20;79:2	29:12,16;31:7;	27:5;29:6,11,18;32:9;
31:21	level (5)	LINGENFELTER (5)	40:23	33:17;35:1;38:19;
Larry (2)	9:5;25:10,10;53:3;	8:18;9:2,11;52:17;	lowering (1)	74:24;78:15,19
63:12;68:11	78:7		8 . ,	
,		53:17	65:24	Mary (3)
last (11)	levels (3)	link (1)	lowest (3)	3:6,9;60:4
3:23;4:20;5:3;7:19;	37:20;38:4;40:11	42:3	31:10,11;41:6	massive (1)
20:6;24:3;36:12;37:6;		list (2)	LUAUTERS (4)	55:22
44:20;70:10,11	18:14	23:7;64:20	70:14,16;71:13;	match (2)
late (1)	Lewin (1)	lit (3)	80:1	43:1,17
4:9	42:15	39:17;63:21;69:16	lucky (2)	materials (1)
later (3)	life (8)	little (13)	5:13;75:10	34:9
26:20;37:1;68:23	17:4;23:22;33:9;	12:8;13:13;14:20;	lumens (2)	matter (3)
latest (1)	49:10,14;67:15;	15:3,5;25:3;34:17;	76:5,6	2:20;3:11;11:9
18:17	76:11;78:8	39:2,18;45:12;47:20;	luminaire (2)	maximize (1)
lead (1)	lifespan (1)	60:8;80:5	22:17;46:24	28:5
8:9	17:6	live (3)	luminaires (1)	maximizing (1)
leading (2)	lifetime (1)	18:20;63:13;76:18	24:10	62:1
27:1,3	64:2	loan (2)	lymphomas (1)	may (7)
leap (1)	light (52)	10:5;63:3	68:3	35:5;42:17;49:24;
31:17	12:15;19:8;20:15;	loans (5)	00.5	59:24;62:14;84:6,7
leaps (1)		54:8,19,21;55:14;	M	maybe (4)
	21:24;22:7,14,15,16;		IVI	
30:11	25:10;29:19;37:20;	56:7		57:23;58:19;68:8;
learn (1)	38:1;39:18,24;40:7,	local (3)	maintain (1)	80:5
78:10	11;49:14;63:24;64:6,	41:15,16;60:8	33:6	MBE/WBE (1)
learned (4)	8,11;65:6;66:12;	location (6)	major (1)	50:11
38:9,14;39:11;40:1	67:11,14,18,20;68:1,	29:3;38:12;39:9,10;	23:3	mean (8)
learning (1)	17;69:14;71:4;72:5;	79:10,17	majority (2)	18:16;21:2;26:13;
79:23	74:14;75:18,19;76:4,	locations (2)	10:2;18:1	30:5;33:8;35:9;64:17;
least (3)	22;77:9,13,17,19;	37:9;39:15	makes (2)	76:7
21:1;47:11;61:7	78:2,5,8,23;79:1,4,7,	lock (2)	15:11,16	meaning (2)
leave (1)	9,14;81:21,24	56:19;57:12	making (6)	67:19;68:24
57:2	Lighting (36)	locked (2)	41:13;43:3,22;44:8;	meaningful (1)
LED (17)	4:4;8:22;9:19,23;	77:5,10	45:3;59:23	14:9
12:1;13:9;16:10;	11:11;12:1,1;15:3,4;	long (3)	manage (1)	means (3)
21:3,5,15,15;31:8;	16:21;17:22;23:10;	11:16;20:6;82:16	6:9	58:11;68:23;76:8
34:20,24;36:11;	24:21;25:24;33:12;	long-term (1)	manageable (1)	measures (1)
37:22,23;40:7;65:9;	36:11;37:22;38:4,10,	28:22	39:19	51:21
75:12;77:24	16,22;40:7;46:23;	look (16)	management (4)	meat (1)
LED's (8)	47:2;54:2;61:5;62:6;	4:23;5:24;6:20;	11:18;12:2;24:21;	14:21
18:9;32:16;65:10,	64:13,21;65:2;72:11;	8:10;30:9;38:22;	47:2	Medical (2)
12;68:12;73:16;74:5;	73:6;74:9,12;75:9;	40:12;55:12;62:15;	mandatory (1)	65:17,21
79:8	77:2	64:23;68:16;69:1,24;	77:9	meet (9)
left (2)	lights (43)	72:7;82:6,13	manual (2)	3:1;10:13;41:7;

-				
47:24;50:13;51:19,	51:23	9:18;13:3;16:5;	negotiations (2)	number (5)
23;58:24;59:1	minute (4)	21:4;22:23;23:6,19;	49:24;53:11	11:3;12:23;36:3;
meeting (18)	4:14;45:17;46:1;	29:14;34:23;69:14,	neighborhood (2)	55:21;72:24
2:1,4,9,23;5:3;6:1,	69:5	16;73:12	37:4,7	numbers (1)
7,19;23:12;26:22;	minutes (4)	mostly (1)	neighborhoods (6)	55:12
52:8;61:18;63:18;	2:9;65:15;67:3;	29:1	12:14;35:21;38:23;	numerous (2)
73:1;84:12,20;85:9,	80:2	motion (8)	50:17;55:1;76:18	38:11;41:1
12	Miss (8)	2:11,13,15;9:8,15;	nervous (1)	30.11,41.1
meetings (2)	2:16;9:10;52:8;	53:14,22;84:14	68:20	0
3:9:48:7	53:16;55:11;67:2;	move (8)	network (7)	U
3.9,46.7 melatonin (5)	70:5;84:16	5:3;9:9;14:12;37:3;	21:23;25:1,5;26:9;	andh (1)
	missing (1)			oath (1)
67:22,24;68:24;		46:8;53:10;79:11;	28:12;59:16,21	85:6
69:4,8	69:8	84:15	new (26)	obviously (7)
member (1)	mix (1)	Moved (6)	4:13,13,21,22,24,	8:4;9:19;38:6;43:1;
55:10	15:15	9:10;31:18;48:2;	24;19:6;20:15,19;	55:5;59:8;78:24
members (4)	MLS (1)	53:15,16;84:16	21:7,7,13,13,14;22:6;	occur (1)
7:12;43:11;50:1;	59:4	moving (8)	24:21,22;42:9;44:20;	81:11
83:3	mockup (1)	4:18;6:8;7:6;8:5;	57:12;61:15,16;	October (2)
memorialized (1)	72:12	49:23;53:12,24;77:18	69:11;73:4;74:5,12	2:9;73:1
48:21	mockups (1)	MSI (1)	newer (1)	OEMC (1)
memory (2)	72:1	68:24	22:1	44:12
12:8;68:6	model (2)	much (23)	news (5)	off (9)
mental (1)	8:6;17:12	11:10;12:21;17:10;	18:2;20:10;21:21;	5:19;20:18;21:2;
69:9	modeled (1)	18:2,10;25:7;27:5;	40:19;69:11	25:21;29:19;34:12;
mentioned (8)	17:9	28:19;33:4;44:18;	next (11)	55:13;56:2;73:3
28:1;49:9;55:3;	modernization (1)	53:23;58:21;66:24;	3:19;6:1,7;56:24;	offer (3)
57:3;59:14;81:22;	15:11	68:9,10;71:4;73:2;	61:18;66:19;70:9;	5:4,10;47:11
82:23;83:12	moment (1)	74:16;76:1,23;78:17,	77:7,14;83:10;84:12	offerings (1)
menu (2)	28:13	18;83:23	night (12)	59:18
21:12;23:5	monarchs (1)	multiple (2)	38:1;44:20;63:22;	offers (1)
mercury (1)	69:10	52:21;82:18	65:7,13;67:14,16;	48:17
65:10	money (9)	municipalities (2)	68:1,21;71:3,16;	offline (1)
messages (1)	16:24;21:11,12;	17:10;18:9	81:10	23:17
25:19	23:5;56:6;60:6;71:24;	mutually (2)	nights (1)	often (1)
met (2)	79:11,12	60:16,23	4:10	31:1
11:22;50:10	monitor (2)	00.10,23		
		N	nighttime (2)	old (1)
method (1)	16:21;25:22	19	37:22;67:19	21:2
77:15	months (6)		nodules (2)	once (4)
Metropolitan (1)	3:23;4:3;28:17;	name (4)	21:20,22	14:13;46:7;71:22;
3:5	36:12;62:17,20	63:12;70:10,11;	none (2)	72:4
Michigan (5)	mood (1)	82:21	2:20;8:24	oncoming (1)
63:13,15,16;66:8;	68:6	nation (1)	nonvoting (1)	74:7
69:2	moot (1)	31:16	46:15	one (34)
middle (1)	72:7	national (1)	noon (1)	7:17,18;20:18,19;
55:19	more (54)	30:6	3:2	22:19;23:19;28:24;
midnight (1)	4:1,4,8;7:5,8,17;	nationally (1)	north (2)	30:16;34:21;35:9;
64:5	8:5,6;10:3;12:15;	30:10	50:24;55:17	39:12;41:19;46:22;
might (2)	14:21;15:5;22:3;24:9;	necessary (2)	notes (1)	51:18,22;54:13,13;
10:4;34:17	26:9;30:2;33:4,13;	23:17;64:10	85:11	55:2;57:1;65:8;67:21;
Miguel (1)	35:6;36:15,19;37:21;	need (11)	not-for-profit (1)	68:14;69:5,20,21,21;
63:1	41:2,19;47:20;50:4;	2:5;7:11;16:4;	59:16	77:6,22;78:3;80:1,3,
miles (3)	51:22;54:14;56:8,12,	25:20,20,21;29:18;	notice (1)	8;83:2,12
63:20;70:1,2	17,21;57:23;58:14,14,	33:12;56:9,10;78:11	3:12	ones (5)
Milky (1)	19;59:8;60:3,12,14;	needed (5)	noticed (1)	12:15;20:16,19;
	17,27,0,00,3,14,14,		69:7	29:2;58:22
/():4			07.1	
70:4 million (6)	62:19;64:16,24;	16:24;17:13;22:23;	notices (1)	ongoing (1)
million (6)	62:19;64:16,24; 65:12,15;68:4,7,10;	23:7;33:1	notices (1)	ongoing (1)
<b>million (6)</b> 8:20;33:23;54:19,	62:19;64:16,24; 65:12,15;68:4,7,10; 70:7;75:19;76:10;	23:7;33:1 needs (6)	67:20	79:20
<b>million (6)</b> 8:20;33:23;54:19, 20;76:9,12	62:19;64:16,24; 65:12,15;68:4,7,10; 70:7;75:19;76:10; 78:10;80:5;82:16	23:7;33:1 needs (6) 10:13;23:23;24:15;	67:20 noting (2)	79:20 online (2)
million (6) 8:20;33:23;54:19, 20;76:9,12 mind (2)	62:19;64:16,24; 65:12,15;68:4,7,10; 70:7;75:19;76:10; 78:10;80:5;82:16 <b>mortgage (1)</b>	23:7;33:1 needs (6) 10:13;23:23;24:15; 41:13;60:22;84:8	67:20 noting (2) 8:19;31:4	79:20 <b>online (2)</b> 37:11;70:22
million (6) 8:20;33:23;54:19, 20;76:9,12 mind (2) 28:20;30:2	62:19;64:16,24; 65:12,15;68:4,7,10; 70:7;75:19;76:10; 78:10;80:5;82:16 <b>mortgage (1)</b> 9:3	23:7;33:1 needs (6) 10:13;23:23;24:15; 41:13;60:22;84:8 negotiated (1)	67:20 <b>noting (2)</b> 8:19;31:4 <b>novice (1)</b>	79:20 online (2) 37:11;70:22 only (7)
million (6) 8:20;33:23;54:19, 20;76:9,12 mind (2) 28:20;30:2 minimize (1)	62:19;64:16,24; 65:12,15;68:4,7,10; 70:7;75:19;76:10; 78:10;80:5;82:16 mortgage (1) 9:3 mortgages (1)	23:7;33:1 needs (6) 10:13;23:23;24:15; 41:13;60:22;84:8 negotiated (1) 7:21	67:20 <b>noting (2)</b> 8:19;31:4 <b>novice (1)</b> 27:5	79:20 online (2) 37:11;70:22 only (7) 43:20;58:20;59:9;
million (6) 8:20;33:23;54:19, 20;76:9,12 mind (2) 28:20;30:2	62:19;64:16,24; 65:12,15;68:4,7,10; 70:7;75:19;76:10; 78:10;80:5;82:16 <b>mortgage (1)</b> 9:3	23:7;33:1 needs (6) 10:13;23:23;24:15; 41:13;60:22;84:8 negotiated (1)	67:20 <b>noting (2)</b> 8:19;31:4 <b>novice (1)</b>	79:20 online (2) 37:11;70:22 only (7)

37:11;62:22	outside (3)	2:21;9:15;53:22	13:7;19:4;24:6;	30:11;35:9;42:5;
operating (1)	7:5;57:17;63:10	passing (1)	63:14	43:20;46:8;74:14;
6:21	outsider's (1)	70:12	places (4)	81:8;83:11,22
operations (3)	30:3	past (2)	12:20;13:9;35:21;	possibly (2)
3:11;25:12,16	outstanding (1)	4:2;33:9	36:4	12:5;82:10
opinion (1)	6:23	patience (1)	plan (5)	post (3)
73:11	over (17)	54:1	10:10;11:20;52:6;	32:2,15;57:19
opinions (1)	3:23;4:2;13:1;15:2;	Patty (2)	55:6,8	potential (5)
77:1	19:4;64:6,7,8;65:19;	3:15;4:12	planet (1)	15:23;26:15;29:9;
opportunities (9)	66:6;76:10,12;77:14;	pay (1)	67:16	40:6;57:4
8:12;26:2;29:2;	78:6;79:18,18,19	57:11	Planning (5)	potentially (2)
31:2;39:6;40:9;60:1;	over-illuminating (1) 39:22	PC (2) 69:18;70:2	3:6;10:7;14:11,15; 50:19	28:10;56:21 potentials (1)
61:15;83:18 opportunity (11)	own (4)	peak (1)	plans (2)	27:21
6:13;15:14;37:16;	40:14;62:12;64:14;	55:9	42:17;47:4	potholes (1)
38:4;43:17;49:2;	66:17	people (24)	platform (3)	27:15
56:14;70:3;72:23;	oyster (1)	27:13;30:17,23;	26:16;29:9,22	practically (1)
74:17;81:19	15:10	32:13,16,20,22;53:1;	Please (1)	31:16
opposed (6)	33133	55:21;56:18;57:11,	78:18	practices (1)
2:18;9:13;16:15;	P	21;70:1,23;72:10;	pleased (5)	84:4
30:24;53:20;76:5		73:23,23;75:10,11;	13:17;17:16;20:2;	Prado (1)
opposite (3)	packet (1)	76:17,23;81:12,12,22	31:20;49:17	6:4
22:11;39:22,23	6:18	per (6)	plowed (1)	pre (2)
option (2)	pancreatic (1)	76:5,6,6,10;79:5,5	27:15	32:1,10
35:3;43:20	68:3	perceived (1)	plus (1)	preliminary (2)
options (2)	parcels (1)	75:8	8:21	47:22;48:14
28:8;40:17	59:23	percent (12)	point (10)	pre-qualified (1)
oral (1)	park (2)	11:24;12:9,21;16:7;	16:2;25:14,15;	54:21
48:4	44:13;63:16	37:20,23;50:14,16,24;	26:12;49:19;69:3;	presentation (4)
order (4)	parking (1)	51:1,4;64:15	73:17,17;78:5,13	6:2;30:20;48:5,23
2:4;5:5;32:12;56:4	27:14	perceptions (1)	points (2)	presented (2)
orders (1) 33:5	part (21) 4:24;7:23;21:9,18;	77:2 performed (2)	52:18;75:3 pole (6)	16:7;48:22 presents (2)
ordinance (2)	31:20;32:11;35:4,8,	39:16;50:14	35:6;36:2;39:24;	42:8;43:17
50:18;52:1	10;38:6;44:16;48:22;	perhaps (1)	61:9;73:9;79:16	President (1)
organizational (1)	50:5;52:11,13,14;	18:8	poles (24)	63:14
3:11	60:18;71:5;75:13;	period (2)	19:16,20;21:7,13,	pressure (1)
organizations (4)	82:8;83:5	54:4;74:21	14;22:7,10,23;23:6,6,	75:20
46:17;55:10;59:17,	participated (2)	peripheral (1)	14,20;32:6;34:12,19,	presumably (1)
21	58:2,3	76:21	21;35:19;36:1,14,15,	25:15
Originally (1)	participation (1)	personally (1)	20;42:23;79:10,10	Presuming (1)
67:12	51:24	84:1	policy (1)	2:10
ornamental (2)	particular (1)	perspective (6)	59:3	pretty (5)
12:12,21	22:15	18:2;30:3,7,16;	political (1)	8:23;12:21;15:24;
O'SHEA (6)	particularly (2)	43:8,10	82:21	26:7;76:1
2:13,16;43:9;54:12;	61:10;65:10	pertaining (1)	polluted (1)	prevalent (1)
56:11;84:17	partly (1)	61:15	69:14	13:3
otherwise (1)	30:6	<b>phase (3)</b> 48:3,19;77:6	pollution (2)	previously (1) 49:22
72:4 out ( <b>29</b> )	partner (3) 46:16;60:21;62:3	48:5,19;77:0 phenomenal (1)	63:24;67:11 poor (1)	price (4)
9:4;19:11,17;26:9;	partnering (2)	82:22	73:16	18:16;20:8;41:6;
30:18;32:6,16,18,18,	60:24;62:8	phonetic (1)	portion (1)	82:4
19;38:22;39:8;41:17;	partners (1)	55:11	23:15	prices (1)
42:4,17;47:24;51:24;	5:22	physical (1)	position (1)	18:11
55:4;56:13,23;59:3,	partnership (1)	69:9	28:9	pricing (4)
18;60:20;62:7;67:15,	60:1	pilot (3)	positioned (1)	34:4,7,15;41:2
24;78:1;79:13;81:6	partnerships (3)	35:11,17;42:1	62:6	primarily (2)
outage (2)	58:18;59:14;75:10	pipeline (5)	positive (2)	7:9;12:16
12:4;16:15	parts (1)	7:11;8:10,20;9:18;	31:21;52:4	primary (1)
outcome (1)	50:23	83:4	possibility (4)	11:23
13:17	part-time (1)	placard (1)	26:18;29:5;42:10;	principle (1)
outreach (1)	4:21	3:13	61:20	10:12
82:8	passes (3)	place (4)	possible (9)	prior (4)
-	1	1	1	1

6:19;13:24;18:22;	project (53)	49:12,13		received (5)
46:5	7:10;9:17,24;10:9,	prudent (1)	R	14:13;37:19;47:23;
prioritize (2)	16,18,23;11:2,5,6,17,	17:1	IN .	53:9;73:10
23:5;33:5	18,18,19,23;14:7,10,	prudently (1)	radiofrequency (3)	recognize (1)
prioritized (2)	24;15:6,9,16;16:1;	6:9	25:5,13;29:13	16:23
19:24;44:17	17:23;19:12;24:4,11,	public (23)	raises (1)	recognizing (1)
priority (2)	13;30:8,14;35:4;	28:2,2;38:3,8;39:2;	60:19	15:22
16:17;43:10	36:12;37:7;41:11;	40:2,14;41:22;42:18;	Ralph (4)	recommend (4)
<b>private (2)</b> 17:11,13	42:14,16;44:9,16;	43:23;52:12,13;59:2;	34:16;55:3,10;56:9	7:15;38:20;49:21; 66:21
pro (1)	45:9;49:16;51:8; 53:11;61:5,11,17;	63:7,8;64:14,15; 74:21;80:15;81:1,2;	range (1)	recommendation (11)
5:15	62:6;68:15,16;81:4,7,	82:8,13	33:23	6:8;9:23;47:14,16,
proactive (2)	14;82:5,8;83:4	public's (1)	ranking (1) 47:10	18;48:21;49:1;53:10;
43:6;44:7	projects (5)	81:3	rate (7)	65:20,22;81:24
proactively (1)	4:3;8:10;61:16,21,	pull (1)	6:24;56:17,21;57:4,	recommendations (3)
43:13	24	29:11	5;68:2;69:13	51:20;79:6;81:22
probably (8)	proliferation (1)	pulled (1)	rates (6)	recommending (2)
3:12,19;33:22;	60:14	24:20	24:7;57:6,7,11;	53:11;66:15
39:11;60:4;67:10;	promised (1)	purchase (1)	76:12,13	recommends (2)
78:1,2	18:1	57:12	rather (5)	65:18,23
problem (2)	<b>proofed (1)</b> 36:23	purchasing (1) 18:10	18:13,14;33:24;	reconciled (1) 19:4
30:24;67:7 <b>problems (3)</b>	propensity (1)	purely (1)	43:6;80:17	record (2)
30:19,24;39:21	68:4	28:3	rationale (1)	28:21:63:11
proceedings (2)	proposal (1)	purposes (1)	49:1 reach (1)	recorded (1)
85:8,12	48:3	10:21	54:10	19:8
process (38)	proposals (15)	pursue (1)	reaching (1)	recyclable (1)
4:17;5:20;7:2;	11:2;14:13,23;	31:7	47:10	34:11
13:20;14:4,12,16,18,	17:24;37:13;45:16;	pursuing (1)	reaction (1)	recycled (1)
22;17:15;21:18;	46:5,7,19,20;47:5,9,	43:13	81:3	34:13
23:24;24:13;36:19;	11,24;48:13	push (1)	reactive (1)	recycling (1)
38:7;40:21;45:8,19,	proposed (3)	59:19	43:7	34:10
21;46:2,7;47:22;49:4,	47:1;53:7;73:9	put (13)	read (1)	redeveloping (1)
10;52:19,22;53:3; 61:6;71:1,6,21;77:7,	proposers (2) 48:6;53:9	10:6;17:11,20; 21:14,15;22:5,7;	69:20	23:4 Redevelopment (1)
18;79:20;81:19;	proposition (1)	40:10;45:14;60:6;	readily (1)	63:15
82:16;83:1,5	10:11	74:9,14;75:21	75:24	redo (1)
procured (4)	prostate (1)	putting (2)	real (5) 28:8;30:10;39:20;	21:9
7:4;72:2,5,13	68:2	20:17;24:9	53:4;76:14	redrafting (1)
procurement (17)	protection (1)		reality (5)	5:21
7:2;13:17;17:15,21;	20:4	Q	11:17;23:19;43:3;	reduce (1)
25:8;35:7,10;38:6,18;	proud (2)		45:4;49:7	22:16
52:18;71:1,6,21,23;	4:2;5:7	qualifications (1)	really (39)	reducing (2)
77:5;80:5;81:18	proven (1)	41:14	3:7,8;4:1,11;11:6,	24:7;67:14
produces (1)	62:7	qualified (1)	19;13:16;15:21,22;	referring (1)
73:18 <b>producing (1)</b>	proves (1) 35:17	52:21 quality (8)	19:9,15,21;20:1,3,5;	21:4 <b>refi (1)</b>
76:4	provide (12)	20:3,8;27:20;41:4,	30:17,23;31:14,16;	57:12
product (2)	6:23;10:15;11:1;	10;49:10,14,14	32:22;36:22;39:17; 40:1;44:11;45:19;	refine (3)
66:18,21	12:3,5;38:1;46:23;	quantity (1)	46:9;47:21;49:5,6,10;	14:4;40:4;79:18
production (1)	47:13,17;48:9,24;	18:12	52:17,22;54:23;55:6;	reflected (1)
67:22	51:2	quick (2)	59:15;71:18;73:5;	78:24
productive (1)	provided (9)	45:17;80:21	80:23,24	refocus (1)
84:2	10:21;11:8,18,21;	quicker (1)	realtime (4)	83:9
products (2)	31:12;41:9;48:21;	69:5	12:4;16:15;18:20;	refresh (1)
17:6;34:12	52:3;53:7	quickly (4)	24:22	12:8
<b>program (19)</b> 5:10;7:24;8:1;42:4;	provider (1)	15:24;46:1;47:20;	realtor (1)	regarding (2)
51:11,13,15;54:7,10,	31:9 <b>provides (1)</b>	53:24 <b>quite (8)</b>	54:15	5:2;49:23 region (1)
17,22;57:5;59:6,9,11;	8:24	17:17;27:2,3;39:4,	realtors (6)	71:17
60:5,13;62:12;63:3	providing (8)	14;61:12;73:6;83:6	54:13;58:18,22; 59:2,4,15	regret (1)
programs (3)	5:14;6:11;7:1;	,	79:2,4,15 reasons (1)	66:14
51:9;60:15,20	10:12;29:22;37:15;		23:16	regular (1)
			23.10	

				_
25:17	48:23	results (1)		17:11
reiterate (1)	represented (1)	6:6	S	seeing (3)
40:5	43:12	retina (1)	8	21:5;27:10;77:20
reject (1)	reprocure (1)	67:20	1(1)	seized (1)
47:16	77:9	Retrofit (1)	sad (1)	31:3
relation (1)	request (3)	61:17	3:16	selected (2)
59:14	48:16;61:8;83:2	return (2)	safe (1)	49:24;51:21
relatively (2)	requesting (1)	8:23;27:23	34:8	selection (5)
6:24;29:16	6:15	revenue (5)	safety (3)	46:12;47:14;48:22;
release (1)	require (3)	8:13;28:8,15;35:18;	41:22;42:18;43:23	49:2;77:18
60:13	35:5,23;36:6	83:15	salvage (6)	selfish (1)
relevant (1)	requirement (3)	reverse (1)	32:5,7;33:16,17;	23:16
75:4	51:4,10;80:15	77:12	34:5,14	self-sufficiency (1)
	requirements (4)	reversed (1)	same (6)	8:5
reliability (2) 24:7;33:9	41:7;50:11,13;	34:6	3:2;4:19;18:15;	self-sustaining (2)
reliable (1)	51:20	review (7)	39:7,13;65:11	
			save (2)	8:13;9:1
24:9	requires (1)	6:13;47:7,15,15,22;	16:4,10	send (3)
reliably (1)	35:4	48:3,6	saving (2)	25:19;37:16;52:9
33:12	requiring (1)	reviewed (2)	43:21;49:12	sense (6)
reluctant (1)	50:12	2:10;53:8	savings (2)	10:4;15:12,16;26:6;
78:16	research (1)	revisit (1)	16:12;61:20	28:15;33:22
remain (1)	69:19	55:9	saw (3)	sensors (2)
2:22	researching (1)	<b>RFI</b> (2)	4:20;44:20;73:5	15:19;27:11
remarks (1)	75:7	13:24;82:17	saying (2)	sent (2)
15:8	residential (1)	<b>RFP</b> (5)	36:9;76:14	49:22;59:3
remember (1)	39:13	41:18;45:10;48:1;	scale (4)	separate (4)
10:5	residents (5)	50:11,12	16:19;18:7,10;	46:21;48:7;50:23,
remotely (1)	37:12,14;49:11,13;	<b>RFQ</b> (1)	35:16	23
25:22	50:15	13:22	scared (1)	separated (1)
rendition (1)	resolution (2)	rich (1)	68:21	34:13
76:21	49:21;53:7	65:9	schedule (2)	September (1)
renowned (1)	resource (3)	right (35)	13:15;45:20	3:3
11:13	11:4;58:15;83:6	2:3,6;8:16;9:4,21;	scheduled (1)	seriously (2)
Renteria (2)	resources (7)	22:24;26:4;29:5,8,16,	6:5	75:6;81:5
6:4,4	11:9;41:15;60:14;	17,24;30:4;31:1,8,17;	scope (4)	serve (1)
repair (1)	61:9,13;62:21;83:17	35:12,13;39:11;	14:4,24;15:6;49:9	26:11
20:21		40.21.42.5 22.45.5.		
20.21	respond (5)	40:21;42:5,22;45:5;	score (2)	serves (1)
repairing (1)	respond (5) 14:9;27:18;74:20;	40:21;42:5,22;45:5; 46:4;51:16;55:20;	score (2) 45.9.55.18	serves (1) 26:10
			45:9;55:18	
repairing (1) 32:21 repairs (3)	14:9;27:18;74:20;	46:4;51:16;55:20;	45:9;55:18 scores (1)	26:10
repairing (1) 32:21 repairs (3)	14:9;27:18;74:20; 76:23;78:10	46:4;51:16;55:20; 57:23;61:23;68:11;	45:9;55:18 scores (1) 58:10	26:10 service (3)
repairing (1) 32:21	14:9;27:18;74:20; 76:23;78:10 responded (1)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21;	45:9;55:18 scores (1) 58:10 scoring (3)	26:10 service (3) 8:6;58:2;59:4
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14	26:10 service (3) 8:6;58:2;59:4 services (5)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5;
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5,	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17;	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24;	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11;	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5,	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18;
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7;
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3)	14:9;27:18;74:20; 76:23;78:10  responded (1) 40:17  respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2) 42:4,17	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1;
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2) 42:4,17 rollout (1)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2) 42:4,17 rollout (1) 66:19	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2) 42:4,17 rollout (1) 66:19 room (1)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2) 42:4,17 rollout (1) 66:19 room (1) 84:3	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9;	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2) 42:4,17 rollout (1) 66:19 room (1) 84:3 rough (1)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1) 48:1	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2) 42:4,17 rollout (1) 66:19 room (1) 84:3 rough (1) 3:19	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1) 85:8	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1) 48:1 responsiveness (2)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6 road (1) 74:4 robust (1) 45:22 roll (1) 2:5 rolled (2) 42:4,17 rollout (1) 66:19 room (1) 84:3 rough (1) 3:19 route (1)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3) 9:11;53:17;84:17	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6) 30:14;65:3,3,16;
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1) 85:8 reporter (2)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1) 48:1 responsiveness (2) 47:22;48:1	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6  road (1) 74:4  robust (1) 45:22  roll (1) 2:5  rolled (2) 42:4,17  rollout (1) 66:19  room (1) 84:3  rough (1) 3:19  route (1) 16:20	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3) 9:11;53:17;84:17 Secondly (1)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6) 30:14;65:3,3,16; 66:11;82:19
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1) 85:8 reporter (2) 85:6,17	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1) 48:1 responsiveness (2) 47:22;48:1 rest (2)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6  road (1) 74:4  robust (1) 45:22  roll (1) 2:5  rolled (2) 42:4,17  rollout (1) 66:19  room (1) 84:3  rough (1) 3:19  route (1) 16:20  rugged (1)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3) 9:11;53:17;84:17 Secondly (1) 31:4	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6) 30:14;65:3,3,16; 66:11;82:19 shaded (1)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1) 85:8 reporter (2) 85:6,17 reports (1)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1) 48:1 responsiveness (2) 47:22;48:1 rest (2) 2:23;53:24	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6  road (1) 74:4  robust (1) 45:22  roll (1) 2:5  rolled (2) 42:4,17  rollout (1) 66:19  room (1) 84:3  rough (1) 3:19  route (1) 16:20  rugged (1) 20:7	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3) 9:11;53:17;84:17 Secondly (1) 31:4 Secretary (1)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6) 30:14;65:3,3,16; 66:11;82:19 shaded (1) 64:22
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1) 85:8 reporter (2) 85:6,17 reports (1) 25:17	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1) 48:1 responsiveness (2) 47:22;48:1 rest (2) 2:23;53:24 restriction (1)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6  road (1) 74:4  robust (1) 45:22  roll (1) 2:5  rolled (2) 42:4,17  rollout (1) 66:19  room (1) 84:3  rough (1) 3:19  route (1) 16:20  rugged (1) 20:7  run (1)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3) 9:11;53:17;84:17 Secondly (1) 31:4 Secretary (1) 63:16	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6) 30:14;65:3,3,16; 66:11;82:19 shaded (1) 64:22 shadows (1)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1) 85:8 reporter (2) 85:6,17 reports (1) 25:17 representative (1)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1) 48:1 responsiveness (2) 47:22;48:1 rest (2) 2:23;53:24 restriction (1) 79:16	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6  road (1) 74:4  robust (1) 45:22  roll (1) 2:5  rolled (2) 42:4,17  rollout (1) 66:19  room (1) 84:3  rough (1) 3:19  route (1) 16:20  rugged (1) 20:7  run (1) 60:10	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3) 9:11;53:17;84:17 Secondly (1) 31:4 Secretary (1) 63:16 section (3)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6) 30:14;65:3,3,16; 66:11;82:19 shaded (1) 64:22 shadows (1) 73:19
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1) 85:8 reporter (2) 85:6,17 reports (1) 25:17 representative (1) 72:6	14:9;27:18;74:20; 76:23;78:10  responded (1) 40:17  respondents (5) 13:23;14:1,5;51:17; 52:21  responding (1) 80:14  response (4) 2:19;9:14;22:20; 53:21  responses (2) 45:10;53:9  responsible (1) 45:3  responsive (1) 48:1  responsiveness (2) 47:22;48:1  rest (2) 2:23;53:24  result (1)	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6  road (1) 74:4  robust (1) 45:22  roll (1) 2:5  rolled (2) 42:4,17  rollout (1) 66:19  room (1) 84:3  rough (1) 3:19  route (1) 16:20  rugged (1) 20:7  run (1) 60:10  running (2)	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3) 9:11;53:17;84:17 Secondly (1) 31:4 Secretary (1) 63:16 section (3) 37:16;64:23;65:9	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6) 30:14;65:3,3,16; 66:11;82:19 shaded (1) 64:22 shadows (1) 73:19 share (7)
repairing (1) 32:21 repairs (3) 17:3;19:24;23:8 replace (6) 16:24;21:3;24:2,5, 12;32:18 replaced (2) 19:22;24:16 replacement (3) 24:11,13,20 replacements (1) 21:6 replacing (2) 17:1;23:24 report (3) 17:16;20:2;29:21 reported (1) 85:8 reporter (2) 85:6,17 reports (1) 25:17 representative (1)	14:9;27:18;74:20; 76:23;78:10 responded (1) 40:17 respondents (5) 13:23;14:1,5;51:17; 52:21 responding (1) 80:14 response (4) 2:19;9:14;22:20; 53:21 responses (2) 45:10;53:9 responsible (1) 45:3 responsive (1) 48:1 responsiveness (2) 47:22;48:1 rest (2) 2:23;53:24 restriction (1) 79:16	46:4;51:16;55:20; 57:23;61:23;68:11; 70:14;75:12,21; 79:24;80:16;84:6  road (1) 74:4  robust (1) 45:22  roll (1) 2:5  rolled (2) 42:4,17  rollout (1) 66:19  room (1) 84:3  rough (1) 3:19  route (1) 16:20  rugged (1) 20:7  run (1) 60:10	45:9;55:18 scores (1) 58:10 scoring (3) 47:9;48:2,14 Scott (15) 3:13;5:13;8:24; 20:12;21:8,10;23:11; 41:19,21;43:15;44:5, 18;45:1;54:11;56:11 Scott's (1) 5:22 season (2) 56:24;57:18 Second (6) 2:14,16;3:24;10:9; 32:4;67:21 Seconded (3) 9:11;53:17;84:17 Secondly (1) 31:4 Secretary (1) 63:16 section (3)	26:10 service (3) 8:6;58:2;59:4 services (5) 6:24;10:13;12:5; 16:14;49:13 session (3) 60:11;74:19;80:14 set (13) 13:14,20;26:18; 46:5,22;47:24;49:7; 50:11,18;51:24;53:1; 61:18;71:18 sets (1) 68:18 settled (1) 66:13 several (6) 30:14;65:3,3,16; 66:11;82:19 shaded (1) 64:22 shadows (1) 73:19

				. ,
61:22;62:19;68:17	56:4;58:7	73:17	16;50:3;51:4	22:12;27:17;39:13
shepherding (1)	sky (10)	south (3)	staffing (2)	structuring (1)
82:18	63:21;64:6,8,15;	50:22;51:1;55:18	4:18;55:7	52:23
shield (1)	65:22;71:3,16;79:6;	spaces (1)	stage (3)	stuck (1)
78:19	81:10,23	27:14	15:22;25:8;49:7	77:6
shielding (1)	sleep (2)	spades (1)	staggered (1)	studying (1)
65:4	68:4,21	10:20	22:11	67:11
shooting (1)	sleeping (1)	spark (1)	stakeholders (4)	stuff (1)
80:4	18:2	56:18	44:12,15;45:23;	44:22
Shore (1)	SLI <sub>(1)</sub>	speak (3)	82:19	subgroup (2)
13:8	68:23	55:4;72:23;74:17	standards (2)	47:1,3
shorthand (3)	slide (1)	speaker (1)	20:5;75:12	subgroups (2)
85:8,11,17	45:7	70:9	starlight (5)	46:21;48:9
shortlist (1) 14:5	slightly (1) 22:2	<b>speaking (2)</b> 22:4;63:17	67:12;68:23;69:4,5; 70:3	<b>subject (2)</b> 11:9;57:7
shortlisted (1)	slower (1)	spec (1)	stars (2)	submissions (1)
14:3	54:4	82:1	64:2;69:7	37:19
shortly (1)	small (3)	specced (1)	start (4)	submit (1)
54:19	35:15;62:14;66:12	78:21	2:8;46:4;54:22;	37:12
ShotSpotter (2)	smaller (2)	special (3)	57:21	subtracted (1)
42:2;44:3	18:9,10	3:17,20;4:11	started (3)	18:24
show (7)	Smart (12)	specialized (2)	10:5;15:9;20:14	Sue (3)
13:12;44:20;59:5;	4:3;9:19,23;15:19;	11:4,9	STATE (1)	3:6,9;60:5
68:16,23;69:3,19	26:17;36:1,14,20,21;	specific (2)	85:1	sufficient (2)
shuts (1)	54:2;61:5;62:6	9:17;51:9	statement (1)	37:21;64:16
67:21	smarty (1)	specifically (2)	71:11	suggesting (1)
side (2)	26:5	4:3;46:22	states (1)	64:11
39:22;70:19	snow (1)	specification (2)	60:7	suite (1)
sides (2)	27:15	15:4;79:5	stations (1)	5:4
22:10;50:22	snowflake (1)	specifications (2)	36:3	summer (1)
sign (1)	56:2	17:17;46:24	status (1)	65:19
63:9	sodium (1)	specifics (1)	4:19	SUMMERS (58)
signaled (1)	75:21	61:23	stays (1)	2:3,15,18,20;8:8;
68:1	solution (1)	specifying (1)	59:11	9:3,10,13,15;13:5;
<b>significant (2)</b> 33:22;52:20	48:6 <b>solving (1)</b>	22:1 spectrums (1)	steel (2) 23:21;33:21	22:19;23:2;24:17; 27:24;31:23;33:16;
signoff (1)	30:23	68:13	steering (1)	34:16;35:11,14;37:3;
42:7	someone (1)	spend (4)	74:6	43:4;44:19;50:2;52:7,
siloing (1)	23:14	45:6;76:9;80:18;	stellar (1)	11,16;53:6,16,20,22;
44:9	somewhat (3)	83:3	58:10	55:2;57:6,10,21;58:1,
SILVERS (14)	16:22;21:16;39:10	spending (1)	step (1)	6;59:12;60:2;61:2;
24:24;26:12,23;	somewhere (4)	84:2	36:19	62:11;63:6;66:1,4,23;
27:2;28:18;29:8,17,	25:15;32:12;56:4;	spent (3)	steps (1)	67:2,7;70:5,9,13,15;
24;45:3;50:3,8;52:15;	76:5	31:5;62:10;75:6	59:7	71:9;72:19;74:18;
78:12,18	soon (1)	split (1)	still (13)	79:24;80:12;82:15;
SILVESTRI (6)	46:9	50:20	4:19;20:20;23:9,22;	84:16,19
63:12,12;66:1,3,8;	sooner (2)	spoke (1)	24:13,17;25:7;34:8;	sun (1)
67:1	28:17;56:19	17:9	37:14,16,18;38:6;	74:2
similar (3)	sorry (2)	spread (3)	63:3	sunrise (1)
14:16;22:8;60:22	66:4;80:3	54:16,17;59:7	story (1)	64:5
single (3)	sort (15)	spring (3)	9:22	Super (1)
4:7;38:11;69:21	10:8;26:15;28:1;	54:6;56:20;57:16	strategic (3)	57:20
<b>sister (2)</b> 6:12;10:17	30:11,21,24;36:1,18; 41:8;45:13;52:23;	Springfield (1) 60:12	10:7,10;11:20	<b>support (3)</b> 5:11;46:18;53:2
sit (1)	58:19;60:13;63:23;	springtime (2)	streams (1) 28:15	supportive (1)
30:5	72:7	55:5,9	street (12)	28:19
sites (3)	sorts (1)	SS (1)	8:22;11:11;18:23;	suppressed (2)
72:24;73:4,5	26:18	85:2	21:9,13;22:11;25:24;	69:5,8
sits (1)	sounds (1)	stabilization (2)	39:12,13,23;64:23;	suppression (1)
49:22	64:17	12:6;23:7	66:10	68:24
six (3)	source (1)	staff (10)	streetlights (2)	suprachiasmatic (1)
47:23;48:2;53:9	73:18	4:1;8:11;28:21;	15:13;66:20	67:17
size (2)	sources (1)	40:14;43:6,13;46:16,	streets (3)	Sure (26)

surface (1)     65:24;66:22;71:4,     73:17     31:12;37:17;47:19     26:18;32:       74:2     15;75:20;80:4,7     tip (2)     try (4)     37:12;39:	20:17; .16;22:6,7; :16,20;35:8; :3;40:10,18, 7;46:5,9,22; :6;55:8;
36:23,24;37:5;41:13,       19:6;31:19;41:4,9;       timely (1)       38:11       unpleasant         20;43:2,6,16,22;44:3,       43:19;47:1;48:5;82:4       14:18       true (1)       74:8         7,8,16;46:3;49:11;       tells (1)       31:15       85:10       up (38)         50:7;52:7;59:10;71:6;       31:15       timers (1)       5:16;9:1;30:8;       21:14,15,         74:3,22;81:13,20       temperature (7)       tiny (1)       5:16;9:1;30:8;       21:14,15,         surface (1)       65:24;66:22;71:4,       73:17       31:12;37:17;47:19       26:18;32:         74:2       15;75:20;80:4,7       tip (2)       try (4)       37:12;39:         surge (1)       temporary (1)       55:24;56:1       15:7;38:19;58:16;       19;43:1,1         20:4       19:21       today (13)       79:9       49:18;54:         surveillance (1)       tens (1)       3:14,18;4:5,8;6:16;       trying (9)       57:11;61:	20:17; .16;22:6,7; :16,20;35:8; :3;40:10,18, 7;46:5,9,22; :6;55:8;
20;43:2,6,16,22;44:3,       43:19;47:1;48:5;82:4       14:18       true (1)       74:8         7,8,16;46:3;49:11;       tells (1)       85:10       up (38)         50:7;52:7;59:10;71:6;       31:15       55:4       Trust (6)       5:8;10:2;         74:3,22;81:13,20       temperature (7)       tiny (1)       5:16;9:1;30:8;       21:14,15,         surface (1)       65:24;66:22;71:4,       73:17       31:12;37:17;47:19       26:18;32         74:2       15;75:20;80:4,7       tip (2)       try (4)       37:12;39:         surge (1)       temporary (1)       55:24;56:1       15:7;38:19;58:16;       19;43:1,1         20:4       19:21       today (13)       79:9       49:18;54:         surveillance (1)       tens (1)       3:14,18;4:5,8;6:16;       trying (9)       57:11;61:	20:17; .16;22:6,7; :16,20;35:8; :3;40:10,18, 7;46:5,9,22; :6;55:8;
7,8,16;46:3;49:11;       tells (1)       timers (1)       85:10       up (38)         50:7;52:7;59:10;71:6;       31:15       5:8;10:2;         74:3,22;81:13,20       temperature (7)       tiny (1)       5:16;9:1;30:8;       21:14,15,         surface (1)       65:24;66:22;71:4,       73:17       31:12;37:17;47:19       26:18;32         74:2       15;75:20;80:4,7       tip (2)       try (4)       37:12;39:         surge (1)       temporary (1)       55:24;56:1       15:7;38:19;58:16;       19;43:1,1         20:4       19:21       today (13)       79:9       49:18;54:         surveillance (1)       tens (1)       3:14,18;4:5,8;6:16;       trying (9)       57:11;61:	16;22:6,7; 16,20;35:8; 13;40:10,18, 7;46:5,9,22; 16;55:8;
50:7;52:7;59:10;71:6;       31:15       65:4       Trust (6)       5:8;10:2;         74:3,22;81:13,20       temperature (7)       tiny (1)       5:16;9:1;30:8;       21:14,15,         surface (1)       65:24;66:22;71:4,       73:17       31:12;37:17;47:19       26:18;32         74:2       15;75:20;80:4,7       tip (2)       try (4)       37:12;39:         surge (1)       temporary (1)       55:24;56:1       15:7;38:19;58:16;       19;43:1,1         20:4       19:21       today (13)       79:9       49:18;54:         surveillance (1)       tens (1)       3:14,18;4:5,8;6:16;       trying (9)       57:11;61:	16;22:6,7; 16,20;35:8; 13;40:10,18, 7;46:5,9,22; 16;55:8;
74:3,22;81:13,20       temperature (7)       tiny (1)       5:16;9:1;30:8;       21:14,15,         surface (1)       65:24;66:22;71:4,       73:17       31:12;37:17;47:19       26:18;32         74:2       15;75:20;80:4,7       tip (2)       try (4)       37:12;39         surge (1)       temporary (1)       55:24;56:1       15:7;38:19;58:16;       19;43:1,1         20:4       19:21       today (13)       79:9       49:18;54:         surveillance (1)       tens (1)       3:14,18;4:5,8;6:16;       trying (9)       57:11;61:	16;22:6,7; 16,20;35:8; 13;40:10,18, 7;46:5,9,22; 16;55:8;
surface (1)     65:24;66:22;71:4,     73:17     31:12;37:17;47:19     26:18;32:17:47:19       74:2     15;75:20;80:4,7     tip (2)     try (4)     37:12;39:17:47:19       surge (1)     temporary (1)     55:24;56:1     15:7;38:19;58:16;     19;43:1,1       20:4     19:21     today (13)     79:9     49:18;54:54:16;       surveillance (1)     tens (1)     3:14,18;4:5,8;6:16;     trying (9)     57:11;61:16:16	:16,20;35:8; :3;40:10,18, 7;46:5,9,22; :6;55:8;
74:2       15;75:20;80:4,7       tip (2)       try (4)       37:12;39:         surge (1)       temporary (1)       55:24;56:1       15:7;38:19;58:16;       19;43:1,1         20:4       19:21       today (13)       79:9       49:18;54:         surveillance (1)       tens (1)       3:14,18;4:5,8;6:16;       trying (9)       57:11;61:	:3;40:10,18, 7;46:5,9,22; :6;55:8;
surge (1)     temporary (1)     55:24;56:1     15:7;38:19;58:16;     19:43:1,1       20:4     19:21     today (13)     79:9     49:18;54:       surveillance (1)     tens (1)     3:14,18;4:5,8;6:16;     trying (9)     57:11;61:	7;46:5,9,22; :6;55:8;
20:4 19:21 today (13) 79:9 49:18;54: surveillance (1) tens (1) 3:14,18;4:5,8;6:16; trying (9) 57:11;61:	:6;55:8;
surveillance (1) tens (1) 3:14,18;4:5,8;6:16; trying (9) 57:11;61:	
	.11 10.
/6:20   6/:10   9:22;13:10,14;18:10;   22:12;2/:6;30:17;   63:21;66:	
(3)	
	:13;78:24;
37:11,20	81:1
sustained (1) tentative (1) 10:7;23:16;42:16; Tuesday (2) update (4)	10.50.10
	:18;59:13
sworn (1) term (1) told (3) turn (3) updated (2)	)
85:5 32:24 11:23;23:13;26:24 15:2;25:21;74:22 82:7,14	
system (11) terminology (2) Tom (6) turned (1) updates (1)	
12:2,2,3;24:21; 21:1,1 4:11;10:5;45:17,24; 11:16 9:17	
25:24;29:3;32:14; terms (2) 49:5;83:24 turns (2) upfront (1)	
33:4,7;36:24;47:2 31:15;48:12 <b>ton (1)</b> 67:15,24 66:6	
terrific (1) 26:6 tweak (1) up-light (1)	ł
T 4:1 top (5) 81:20 78:22	
Terry (1) 14:11;37:10;55:13; two (9) use (9)	
table (2) 70:10 56:2;68:14 9:16;22:5;35:14; 16:12;23:	:3,5;28:2;
44:4;63:4 <b>test (2) total (1)</b> 42:4;43:11;46:1; 36:1,3;42	2:5,23;62:15
talent (1) 66:9;72:5 45:8 53:10,13;60:15 used (4)	
5:6 testament (1) touch (2) two-way (2) 38:5;40:2	4;60:10;
talk (9) 82:24 23:11;42:13 18:18;29:6 73:7	, ,
4:4;9:17;10:9;15:5, Thanks (3) toward (1) type (1) useful (5)	
18;26:13;37:4;46:1; 40:20;46:3;49:5 8:12 74:9 17:4;23:2	2:33:9:
73:22 therefore (1) towards (1) types (2) 76:11;78:	
talked (5) 29:8 8:5 22:5;82:19 uses (1)	
5:20;20:12;26:13; thinking (6) traction (2) Typically (1) 26:4	
37:6;60:7 34:18;43:24;79:21; 55:23;56:12 3:14 <b>using (1)</b>	
talking (5) 83:14,21;84:4 traffic (1) 62:12	
21:6;29:13;33:3; thoroughfare (1) 74:7 U Usually (1)	
55:15;62:10 23:4 transcript (1) 57:19	
tap (1) though (2) 85:10 Uh-oh (1) utility (2)	
62:21 8:19;17:17 translates (1) 44:24 19:1;26:9	)
targeted (3) thought (7) 76:11 ultimately (5)	
	V
tasked (2) 11:15;45:7,14 26:4;27:9,19 72:7;83:18	<u>'</u>
22:15;47:7 thoughtful (3) transmitted (5) unacceptable (1) valid (1)	
taxpayers (1) 58:14,18;83:10 29:16;36:5;78:23; 40:1 23:19	
10:17   thoughts (1)   79:2,4   unaudited (1)   valuable (2	)
team (21) 84:4 transmitting (1) 6:17 valuable (2)	
	1)
7:12;19:17;28:5;30:3; 67:11;69:19 traveling (1) 56:17,21 32:7	
41:14;45:22;46:5,10; three (9) 27:13 under (3) value (26)	0.11.16
53:8;56:22;75:13; 11:3;16:1,3;32:19; <b>Treasury (1)</b> 6:21;61:24;65:9 6:11,23;1	
	4:17;30:22;
	6,17,19,20;
technical (12) three-minute (1) 8:14 understood (1) 34:14;40:	
38:10,16;46:11,14, 66:5 <b>tremendous (4)</b> 76:2 45:15;47	
17,23;48:7,8,11; <b>throughout (3)</b> 10:22;56:3,14; <b>underutilized (1)</b> 48:19;52:	
64:20;70:19;75:14 27:11;29:23;78:8 82:18 62:2 62:2;76:2	.4;82:24;
technological (2) tie (1) trespass (4) unfortunately (2) 83:14	
30:11,18 69:11 22:16;39:18;71:4; 3:15;57:2 <b>values (1)</b>	
technologies (3) tied (2) 79:15 uniquely (1) 34:6	
26:16,17;36:21 28:8;69:13 <b>tried (1)</b> 62:5 <b>van (1)</b>	
technology (11) timeline (1) 81:5 unnecessarily (1) 38:21	

vapor (1)	water (1)	winter (1)		50:20;61:17
65:11	20:5	54:3	Y	20 (2)
variability (1)	watt (2)	wireless (2)		79:3,4
39:14	76:5,6	25:1;36:15	yards (1)	200 (1)
ariety (1)	wattage (1)	wirelessly (1)	34:2	36:13
22:9	19:14	25:13	year (17)	2008 (1)
various (1)	way (7)	wires (2)	2:24;5:9;6:16;7:13,	67:9
38:23	14:9;29:5;34:7;	23:20;32:21	19,21;10:3;14:14;	2013 (1)
vast (1)	40:17;41:2;51:18;	wiring (4)	24:14;36:11;51:7;	18:22
17:24	70:4	19:16,21;21:7,14	61:7;66:10;76:10;	2015 (1)
vendor (2)	websites (1)	wise (1)	77:10;82:1,16	20:24
34:3,14	82:10	43:19	years (9)	2016 (5)
rendors (3)	Wednesday (1)	wishing (1)	7:17;26:7;31:2;	6:6,17;7:7;11:22;
13:21;14:9;40:16	3:3	63:8	32:19;37:1;63:20;	13:22
versus (2)	week (2)	within (6)	77:7,14,24	2017 (8)
7:6;83:16	3:19;61:18	11:20;19:18;32:2;	77.7,14,24	2:24;5:9;6:9;7:6;
iable (2)	weeks (1)	36:12;46:22;67:21	Z	8:7,11;54:9;85:9
28:3,7	35:15	without (1)	L	24th (1)
vice (1)	weigh (2)	63:23	ZARATE (1)	41:24
63:14	38:4:45:15	wonder (1)	63:2	26 (1)
riew (3)	weighted (1)	64:19		12:22
16:2;39:7;75:3	45:12	wonderful (1)	zero (1)	12.22
rirtually (1)	welcome (1)	3:5	78:22	3
27:22	67:1	Wondering (3)	1	
rirtue (1)	welcoming (1)	42:3;70:22;71:24	1	3 (1)
83:16	81:12	word (3)	1/20/1 (1)	68:18
visibility (3)	weren't (1)	54:17;59:8;73:6	1/30th (1)	3,000 (10)
37:23;38:2;76:19	23:6	work (20)	74:1	21:24;65:18,23;
vision (6)	west (2)	4:2,10;14:2;17:13;	10 (1)	66:15,22;69:23;76:
17:8;49:6;64:19;	50:22,24	30:7;33:5,6;34:20;	50:16	80:4,6;81:24
65:7,14;76:21	what's (8)	40:15;43:2;44:12;	10:00 (1)	3,500 (1)
visited (3)	15:21;25:18,18;	45:6;47:15;50:14;	3:2	66:13
38:11;39:8;72:24	27:17,23;70:10;72:2,	54:14;61:17;71:22;	10:04 (2)	30 (2)
vocational (2)	12	72:22;79:18;82:2	2:2,4	8:20;13:23
51:11,13	wheel (1)	worked (6)	100 (3)	300 (1)
voted (1)	74:6	14:6,8;36:22;41:12;	32:13;70:1,2	19:18
5:3	whereby (1)	44:11;49:9	11:45 (1)	311 (1)
3:3	77:8		84:21	16:16
$\mathbf{W}$		<b>workforce (6)</b> 41:16;47:3,4;50:4;	11th (1)	
<b>VV</b>	Whereupon (2)		41:24	314 (1)
T7 1 (1)	2:1;84:20	51:20;52:6	12 (1)	63:13
Wacker (1)	white (1)	working (12)	28:17	36 (1)
12:19	38:1	6:3;9:24;25:18;	120 (1)	54:21
vait (1)	whiter (2)	32:13;42:14,16;44:8,	76:6	37 (2)
43:7	21:24;76:22	9,15;55:20;58:8;62:1	12th (1)	54:8;58:11
vaiting (1)	whittle (1)	works (2)	3:3	4
16:15	14:2	45:19;81:7	15 (4)	4
vaiver (1)	whole (6)	workshop (1)	12:8,20;54:7;77:24	
42:7	9:24;15:8,9;19:1;	48:8	150 (1)	4,000 (1)
valk (3)	21:13;26:21	world (6)	36:13	21:23
63:22;64:10;65:8	who's (1)	11:12;15:10,20;	15-year (2)	40 (1)
Walsh (1)	2:6	68:14;69:15,17	76:11;78:6	63:20
85:5	whose (1)	world's (2)	18 (1)	42 (1)
Ward (3)	47:14	27:1,3	36:12	14:1
41:24;54:11,12	wide (2)	worst (1)	18th (2)	4-year (1)
vards (3)	22:9;25:1	19:20	2:9;73:1	32:11
37:9;54:8;58:11	widely (2)	worth (3)	1950s (1)	
varmer (4)	56:23;75:24	8:18;31:4;54:20	23:21	5
22:2;74:13;75:19;	width (1)	wrap (2)	1st (1)	
80:7	22:12	66:2;74:23	5:8	5 (2)
vashed (1)	wifi (1)	writing (1)	5.0	50:24;51:1
39:24	29:23	75:11	2	50 (6)
			_	
vaste (1)	wildlife (1)	wrong (2)		32:12;50:13;51:4;

		<b>February 7, 2017</b>
50/50 (1) 8:2 57 (1) 37:23		
6		
60s (1) 23:21 64 (1) 37:21 6-globe (1) 12:19 6th (3) 3:1,3;66:9		
7		
7 (7) 37:8,9,9;39:5,6,15; 85:9 700 (1) 55:18 74 (1) 76:5 7-and-a-half (1) 54:20 7th (1) 36:11		
8		
8 81 (1) 56:7 85 (2) 11:24;13:5 88 (2) 37:20;64:14  9  9 (2) 8:21;14:3 900 (1) 37:19 92 (1) 16:7 9th (2) 14:14;37:13		