

MINUTES OF THE PUBLIC WORKS COMMITTEE

Meeting of: Wednesday, June 11, 2014
Leawood City Hall, Main Conference Room

COMMITTEE MEMBERS PRESENT:

Carrie Rezac, CHAIR and Councilmember Ward 3
James Azeltine, Councilmember Ward 4
Andrew Osman, Councilmember Ward 1
Jim Rawlings, Councilmember Ward 2
Adam Abrams
John Burge
Ken Conrad
Jon Grams
Abbas Haideri
Marsha Monica
Christopher White

COMMITTEE MEMBERS ABSENT

(NONE)-ALL MEMBERS PRESENT

GUESTS:

Timothy Asta Jr., AICP, Director, External Relations, ExteNet Systems, Inc.
3030 Warrenville Road, Suite 340
Lisle, IL 60532 630-776-3769;
Jim Nevin, Director of Implementation for ExteNet Systems, Inc.
Dan Kerr, Project Engineer for Aero Communications, Inc.
Shawn Stewart, Attorney for Stewart Law

STAFF PRESENT: Joe Johnson, David Ley, Julie Stasi

- **Chair Rezac called the meeting to order** at 7:30 AM. [Introductions of Members/Guests and Staff]. Thank you to James Azeltine for Chairing this Committee for 4/5 years.
- **FIRST ITEM OF BUSINESS:** Previous Meeting Minutes
Jon Grams Motioned to approve the Minutes from May 14, 2014.
Marsha Monica seconded the Motion; all members in favor.
Motion passed.
- **SECOND ITEM OF BUSINESS:** Review Extenet Installation of Antenna and Associated Equipment on City Owned Streetlight Poles.

Joe Johnson-This went to the Planning Commission last night at their work session. This was presented, a Franchise Agreement was approved about a year and half ago for ExteNet to come in to Leawood. ExteNet wants to use the City's street light poles to place their equipment on. They are looking at doing this in several cities around Leawood and I will let their representatives explain it further.

Timothy Asta-Good Morning. Thank you for the opportunity to meet with us today. Mr. Asta introduced himself as the Director of Municipal Affairs for ExteNet Systems. With him also were Dan and Jim on the construction side and Shawn Stewart, their attorney, Shawn is a local guy and is helping throughout Johnson County and the region do this identical thing. Tim advised he travels all over the country and they are working in about nine (9) municipalities locally and are in the area to basically improve coverage and capacity primarily for Sprint and Verizon Wireless. We are all having issues with Smart Phones occasionally, they don't work quite as well during Peak AM and Peak PM. We have issues and people pay a lot of money to use their phones. So when Sprint and Verizon call ExteNet and say we have an issue in Leawood-we need to fix it. That does not normally mean towers anymore. Basically they are realizing that traditional siting is not easy from a zoning perspective and they have actually contacted us and asked if we can build our small distributed antenna systems on existing street lights and KCP&L poles and help us solve our problems in Leawood. (And we also have the same issues in Overland Park, Olathe, Lenexa and so on).

Real quick, will review about 10 slides for the Committee. Please interrupt with any questions, however for the sake of your time, he will keep this quick.

ExteNet is not a provider of service. We are a tele-communications utility. We are registered in the State of Missouri and Kansas to operate as a tele-communications utility primarily building fiber optic networks. Once we build those fiber optic networks, we actually terminate those at small nodes or "hot-spots" that we are going to look at on utility poles and street lights. That is how we are improving the service for Verizon and Sprint. We are located in Chicago. Through our Service Agreement we have existing authority to use utility poles but the reality is, utility poles are going away in a lot of areas of Leawood and we need structures. The next best structure is a street light. And we have been doing this in a lot of municipalities nationwide; putting our antennas on your light pole structures to find a way to improve the service and capacity challenges that are out there.

From a technology perspective you will hear me use the term "distributed antenna system" and you may have heard on the internet "small cell". It's the same thing. Basically it is a unit. A utility pole or street light that has a small antenna and some equipment boxes that are connected by a fiber optic cable back to a tower site. So what we are looking at is a system of interrelated small sites, not little stand alone sites that we've seen in the past (towers or antennas on a roof top or a water tank). These actually work together as a system. Think of Christmas lights. They are all connected and they are all tethered together and they route back to a hub. In Sprints instance that hub is on 135th & Antioch, where they have a tower site by the soccer complex. In Verizon's instance there are several small sites that they already have powers. So you need all three (3). You need the fiber, you need the nodes and you need the hub. Most of what we are proposing is just fiber and nodes in your City. The hub is actually in Overland Park in most cases.

Timothy Asta -shows before and after pictures of a pole with and without an installation. If there is a pole, they will try to use it. However in new subdivisions, many of the utilities are all underground and that is why we are talking to you about using street light poles.

In looking at the components, you have an antenna at the very top. A standoff bracket that houses the cables that go underground to a ground based utility cabinet (where the equipment is actually hidden). This is a mandatory thing from KCP&L; they do not allow anything on their poles. Which is the reason you folks have a lot of green boxes in your right-of-way. The reality is, we landscape them and they are not as noticeable but it is a series of additional green boxes. What we are talking about on the street lights is a couple of scenarios. One of which is the same type of scenario where the antenna goes at the top of the light pole. Cables are housed inside of the light pole, go into the same type of ground cabinet that is disguised.

We have been talking about the scenerio of-can we put some equipment onto the pole to elliminate some of those cabinets? There are a couple of options. Antenna at the top (cable shrouds shown in the picture a remote radio). If we can pole mount the radio; verses having it in a cabinet, we've taken that ground cabinet out and now we only need a small utility pedistal like a teleco pedestal if you are familiar with those they are only about 2 x 2 square and they are about 3 to 4 feet tall. That thing can be hidden 400 feet away.

The other design, if we do not have any equipment on the pole, the antenna; we actually have a distance limitation of about 10 feet. So we are kinda proposing two scenerios. We respect the fact that they are your light poles and your property. Aesthetically what would you prefer to see? We did some mock ups the other day so you can see what the Sprint equipment would look like and the reality is, Verizon has different equipment.

David Ley-The other thing is if you cannot put the radio on the pole, the box on the ground is about 6' x 2' and well over 4' tall.

Timothy Asta-Correct. If everything is just on the ground and there is no equipment on the pole, the box gets bigger because we need to house the radios. The boxes will still comply with your public utility sections of your Code, but it will be about 13 or 14 square feet/49 inches tall.

Jon Grams-Is the cable already there?

Timothy Asta-No. We are installing new fiber cable for our sites. There are about 25 sites total.

Jon Grams-Oh that's it?.

Timothy Asta-I'm glad you said that. Some people hear 25 and say "25? How come not 24"? You have about 10,000 poles in your community. We want to use about 25 of them currently; 10 of them are by KCP&L about 15 are street lights.

Marsha Monica-So you will have 25 of those boxes on the ground?

Timothy Asta-If we are allowed pole mounted equipment, those boxes go way down in size and can be hidden. If we don't put any equipment on the poles, the boxes are big and they are very close to the pole. That is why we are showing you both scenerios and asking what do you prefer?

Abbas Haideri-Are the boxes going to be on public property or private property too?

Timothy Asta-The boxes themselves are usually within a dedicated utility easement or in the public right of way behind the sidewalk. If that doesn't exist then we go to the land owner and try to get a private easement; which we have done in Overland Park, Kansas and Olathe, Kansas.

Q: There was a comment in the write up about break away poles, that there was a problem with that box, that that no longer is a requirement.

Timothy Asta- Right, so let's go back just a second. That is part of the reason we are talking about equipment on the pole. The initial proposal here (with Overland Park) when we talked with Planning originally they said they didn't want anything on the poles. So we designed this. The reality is, the cables that come down- that connects the antenna to the radio are coax cables. They get pretty big.

Dan Kerr-1/2 inch but a bundle of 12.

Timothy Asta- So the reality is, the further the box is, assuming the radios are on the ground. The further this is away from the antenna, the bigger the antennas get. And then you can't fit it inside the pole.

Jon Grams-So Verizon or Sprint, have determined where they have bad spots within Leawood.

Timothy Asta-Correct.

Jon Grams-so you are just correcting those bad spots.

Timothy Asta-We're augmenting their system. We're filling in those bad spots with small little nodes.

Jon Grams-And then what about AT&T?

Timothy Asta-AT&T has yet to contact us about anything in this market. We have been very active with Sprint and Verizon. We do anticipate; because we work with AT&T nationwide that once they get wind of it-they could be interested as well. Although we have not heard from them yet.

Jon Grams-Well you need to because I have AT&T...and it's bad.

(Laughter)

Marsha Monica-Question on the boxes. Most of the light poles are along the front of the property lines of people. So you are talking about these boxes in somebody's front yard?

Timothy Asta-the good news is we only have one of the twenty five in a residential zone.

Everything else is on a main road (Mission, 135th, 143rd, Nall, Windsor) not directly in the subdivisions. (One of the reason we were proposing the two scenerios).

Marsha Monica-You would be involving Homes Associaitons; as you mentioned Mission and our subdivision has that whole strip from 128th to 132nd.

David Ley-as far as the gound cabinets, they are just following City Ordinance which currently allows the different cabinets to be installed.

Marsha Monica-I know but my immediate concern is that's a big box.

Timothy Asta-Not any bigger than what is there; but it is a good size. The cabinet we are proposing for Sprint is 3 ½ feet wide, 4 ½ feet long and about 48 inches tall. So it is roughly the same as what you have, it's not going to be anything unusual and it does meey the Code. However, we are proposing to take that big cabinet out. That is what we are actually hoping to do. We would like to have the radios on the pole then that big thing goes away. We still do need a small telco pedestal for our meter. We have a dis-connect and we also will have some back up batteries that allow these sites to function after commercial power is disrupted or if there is a storm or something. The good news is now that can go 400 feet away and can be hidden, it could be in a rear yard easement where you have your other little utility stubs. That is why we are proposing both scenerios; but to the other question earlier, by taking the radios off the ground and putting them on the pole, now we don't have that safety issue if the cable is effectively tethering that pole and now that break away base (if it has it) does function the way it is designed. There is some safety benefits to go on the pole. That is part of the reason we did the mock up the other day so you could see.

Showing pictures of the mock up example. We were very grateful to Public Works to allow us to use a couple of poles for the day. Now I hope you would agree these are pretty unobtrusive. These can also be painted so it is the color of the pole and not a big deal. Many people driving down the street would never notice these.

Ken Conrad-One pole, one antenna would be Sprint, right? Just Sprints service would go through that?

Timothy Asta-Yes and No. We actually can accommodate multiple users on our nodes. However the reality is, sometimes they get cluttered and then that becomes a conversation. Advising he talked at the Planning Board last night and they debated how many boxes do they really want on the poles. We could say, this is a Sprint node and down the street is a Verizon node. Once you see the map, you will actually see they have two distinct shapes. Sprint is clustered in the southern part of your community and Verizon is up north. We are not evan facing that yet, but it could happen.

Ken Conrad-Earlier you mentioned something that sounded like there was a tendency to get away from the single antenna pole system. Is that right? The towers. And have more distributed systems in data voice.

Timothy Asta-Towers are very difficult to get sited. Especially here.

Ken Conrad-Yes I've been through some of those before. My question is, where is the technology going? Is our distributed systems going to be more the future? And we need to think past what this is to the fact and that is my next question. Is one pole, one carrier? And if so then, now this 25 is going to be 200? Or some number? So the criteria we have for these installations need to look beyond these 25 that are filling in dead zones. And what is the future of these distribution systems? I do believe the boxes are obviously everybody's major concern.

Timothy Asta-Yes.

Ken Conrad-When you mention the radio. Can that be mounted higher on the pole?

Timothy Asta-Yes, it can be mounted higher. One of the challenges you have the higher you put anything on the pole, you actually have windshear on the pole itself structurally. So we can mount it where you prefer. We also want to be out of the sight line for vehicles view.

Jim Nevin- Generally, the bottom of the radio is about 9 feet high. We like to have them so we do not have to have a really tall bucket to get them; or to get to them with a ladder. Some weigh about 30 lbs.

Jim Nevin-With the use of the Smart phones, and data actually driving more of the service than the cellular portion is and the carriers are actually looking to do things differently. Today the cellular portion is decreasing and the data portion is increasing and they are going to be moving to a Voice Over IP (Voice-over internet protocol (VOIP)) solution. So that the cellular portion will totally be going away and the phone will just be through the internet, through Voice Over IP; actually be making that call. With that, it requires them to be closer to the ground, closer to the people, and also closer to the ability to be able to penetrate homes. Because land lines are going away, the need for the Smart phone is going to be really the only game in town. So there probably will be more of these locations. One of my commrads in New York City (where I am from)-in Manhattan right now they are putting one of these small cells on every street corner.

Ken Conrad-that is what I'm thinking of as the future technology.

Jim Nevin-Certainly in Manhattan, that's where they want to spend the money, that is where the need is. A lot of people, a lot of use.

Ken Conrad-Where do you put the box in Manhattan?

Timothy Asta-In that case, there isn't a box there. In that case because we are on City light poles, we don't need a meter, we don't need a dis-connect. There is a small box and it's painted black to match the lights. As a City Planner (this is my background) the first question I would ask is: Are we going to have one of these on every pole? And that is a fair question. In Leawood-you do not have the population density to require that and actually one of the comments from last night is: How come you are not covering our whole City? How come you are only covering part of the City? Which is the exact opposite of some of the things we are talking about today (why is there so many)? Last night (how come there is not more)?

Timothy Asta-The reality is, we install these where they are needed and that is it. These are so expensive to build. To replace the light poles, to install the fiber cable, to monitor and maintain these things, the carriers have been kicking and screaming. I have been doing this for ten years. Verizon is finally now in the game saying, okay, fine, this is the only way we are going to get some community to build is with the small cells. So they do not necessarily care for this because it is so expensive. This is not a casual thing there the carriers are going to run around and throw these out on every corner. However, I do see instances where you have bus stops, anywhere multiple people congregate. Movie theatres, shopping centers, restaurants. I can see them being strategically placed. Verizon Store- they would love to have one of these nodes right out front of the Verizon Store over here on 119th. Anywhere you are going to have a population density that is going to drive that. Are we going to see these all through the subdivisions? I do not necessarily

see a lot of it, but in the ten years I've been doing this and I've worked in about 30 States, most of what I'm looking at are residential zones, because we are expecting service as consumers. We pay \$200 for a phone to work, it if it doesn't work in my basement? I'm going to call Verizon up and tell them they are going to lose me and I'll go to AT&T...why doesn't my phone work"? So, we are driven to go to the residential areas so that is the reality of what we are looking at.

Ken Conrad-This is the major cellular phone push to provide high speed data.

Timothy Asta-Correct-additional.

Ken Conrad-AT&T is already in your home. From a data standpoint. They may not get the demand for this upgrade that traditionally phone service cellular companies are getting.

Timothy Asta-That's a fair statement I think you might be right. Kind of like Google. What they are doing throughout the region. Google is providing fiber to the home for TV, internet, that type of service. This is different. This is for mobile communications.

Ken Conrad-and it's for general public access. So when somebody is at my house, they do not need to be on my provider.

Timothy Asta-if they are a Verizon customer or a Sprint customer they would be on the network automatically. Yes. That is exactly right.

Jim Nevin-The OEM's (original equipment manufacturer) right now. You talk about multiple boxes right now, multiple carriers. The OEMS are looking at this thing too. Before we had a box that had two amplifiers on it and now these OEMs are looking to make them a lot smaller, a lot more condense and put a 10 amplifiers in one box.

Ken Conrad-Go to an old Southwestern Bell switch building and you'll see what the technology has changed to. My whole point is and I'm sorry it's been so long, but a lot of what we need to think about is what is going to be here in the future?

Abbas Haideri-If in New York they are doing the little boxes, why aren't they looking at those here?

Tim Asta-The carriers would probably actually move away. The reality is there are certain markets that they are going to spend that additional cost. Because they are going to generate through that high population density, they can justify those additional costs. So that is part of the reason why things look different in New York City than they do elsewhere. By the way, Verizon as an organization operates very differently from region to region to region. These small boxes that are being used here in the Mid-west are different than what you will see in Minneapolis, St Paul, what you will see in Los Angeles and what you will see in Seattle. They function as a completely different organization. They use different equipment. It is how their system works and these sites need to integrate with that main frame. So you will see slightly different equipment and could even evolve. You may even see that Verizon has multiple scenerios within that small area. For example, some of these are 5 watt, sometimes they want a 30 watt box. It all depends on what their goal is at that specific location. This is not casual in any way. This is very targeted, and very strategic, from their point and as I mentioned, very expensive.

Abbas Haideri-I understand. I assume the smaller you get the more expensive.

Jim Nevin-The smaller you get, the more you need.

Timothy Asta-Correct.

Jim Nevin-In New York, they are putting them on everything because they want the capacity isolated to a small spot. So if you go to a 5-watt radio where you needed only one, now you need five.

Timothy Asta-These are 45 watt. The rough range on these is a quarter mile, but it depends on the typography and the tree cover. In Illinois where it is flat and no trees, you probably will get a half a mile. There is a lot of typography and a lot of mature trees, so some nodes will perform much better, but if there is a ridge, some nodes will need to be clustered together in some instances. Each one will perform slightly different. (1/4 mile).

Abbas Haideri-Is there a possibility where you could work with the City where you identify the nodes based on street corners and locations of monument signs for subdivisions, things like that. So that you could hide your boxes behind those kind of HOA owned properties?

Timothy Asta-Sure. We take that into account when we are selecting the sites with Verizon out in the field. But you would be surprised how specific Verizon needs to be. In talking about an Intersection: You would think if you put a node at an intersection, you are covering North, South, East and West. Wow, look, we are getting additional coverage. That may not be the objective. In some cases, Verizon only wants to go down the road to the north because they are connecting a macral site on the rooftop of a hospital and down the road at a grade school or something. Very specific. They can't have interference, these are very specifically located to the point where we could have a clean pole at the intersection and they would want to be 100 feet north, because that is where it needs to be. It really is that specific.

Once we are out in the field though, we are finding where we can't be in front of a house for example, they will go mid-block and hide it. They try their best to do that.

Timothy Asta-The Planning Board did talk to a great extent last night about the size restrictions, so they will be pretty hard on us, making sure they don't allow multiple, different boxes on the pole. I think the comment was are we going to have 5 or 6 of these on the pole? No. These poles are out of space, structurally, that is never going to happen (Leawood's Planning Commission). They are working on size limits, weight limits, I even suggested overall cubic footages because you do have different equipment manufacturers. Don't get hung up on one equipment box. Set an overall limit, an overall weight limit and then you allow the flexibility of the industry to come in and say, hey, this is what I need to use. The reality is if you are too restrictive, you are setting yourself up for a lawsuit. It's just not worth it.

Jon Grams-Has Overland Park already done this?

Timothy Asta-Yes, as a matter a fact Overland Park initially put the street light agreement together, which is what your Legal group here is using as a base line to create your own agreement. We have the same thing in Olathe, Lenexa, Blue Springs, and Wyandotte County.

Jon Grams-You actually have boxes up and it's working?

Timothy Asta-on the wooden poles, we are just now moving towards the construction on the street lights in Overland Park right now. We have submitted applications to them.

Chris White-You mentioned earlier about wind sheer. Joe, I don't know if anyone here is knowledgeable about those structural issues. There obviously is 50 pounds, not sure about 30 pounds, you are impacting the light pole. You mentioned earlier, you do replace the pole?

Timothy Asta-Absolutely, these are all replacement poles. We'll make sure every pole is replaced with a new stronger pole to account for that.

David Ley-The poles were designed for four units on it.

Timothy Asta- Yes, they were designed for four units. Load, plus a banner, plus holiday lights.

Joe Johnson-There will be different foundations (concrete).

Timothy Asta-We do a structural analysis on every pole we use. Even the KCP&L poles we use. We talked about different installations. Verizon installation is different. They have different radios, they need two of them (because they have more of a robust network than Sprint) so they actually need two. Some of the mock ups could allow them to be mounted back to back, like suitcases strapped together, so it reduces the profile significantly. The point being, there are multiple ways to deploy these things and that's why the feedback is being solicited from your Planning Department, Planning Commission and the Public Works Committee.

James Azeltine-You said two hours in front of the Planning Commission, what was the single biggest issue brought up there? What did you spend most of your time on?

Timothy Asta-probably the number of the boxes. They were concerned there was going to be four and five and six boxes on the pole. For example at 119th & Nall or 119th & Roe. Great location there is a lot of action there a lot of restaurants and shopping. That is a prime location. Well there are only so many poles that are usable at that location because we are not allowed on your traffic structures. We are just looking at street lights. So then it becomes, hey, we have no more poles left, can we put more boxes up at the the bottom of those poles. They also were talking about what is the future, are you going to get the rest of our town? Some people I think were looking for a plan for the next 5 years. Other people were saying, we don't want as many. Aesthetics. Size.

James Azeltine-Are we able to get any idea of what comes next after this? Are you guys going to go away forever after this?

Timothy Asta-Nope. Absolutely not. This is one of the things we discuss in every City I go to. This is a very significant investment. ExteNet pays for this and we re-coop that money through the carriers. I have been with ExteNet for ten years. I've been doing this throughout the Country and into Canada. We have been very active and have another project from Sprint so we can build more here in the Kansas City Area. This is not going away. And by the way we also talked about last night, in the unlikely event that ExteNet would go out of business; there are removal bonds, there are insurances in the agreement with the City that if we were to go away in ten years, this stuff comes down and you have the means to be able to do that.

James Azeltine-What I meant, are you going to be coming back in 2 or 3 or 4 years and want to put even more boxes on a single pole?

Timothy Asta-No, I don't think we would do that. I think we would go to the next pole and find another pole down. There is only so much space on the pole. Only because of safety issue. I do not see us trying to overload a pole.

Joe Johnson-We are working on an agreement now that will go before the Governing Body and that is one of the issues we talk about is size and do we limit it to just one carrier/pole. Whatever that agreement is, it will be coming before the Governing Body for approval in addition to in the packet there is the agreement for the attachment fee. Those agreements will come to you before they take the next step. You will have some control on the number on the pole, the dimensions of the box that we are comfortable with. I think that will come from a recommendation of the Planning Commission and it will come from a recommendation from here too. I think they are wanting both groups to look at this, there may even be a Governing Body Work Session to finalize these final points so the agreement can be finished. We wanted to have this discussion and show you what it looks like so that when we get to that point we can have some closure.

Andrew Osman-Is it more beneficial to have a unit on a light fixture or a utility pole? Verses in a commercial area where like you said you have the restaurants and retail offices and put it in a monument sign or up on a rooftop. Which gets you the better coverage from your standpoint the better option? Because if you have some place like Camelot Court right next door and a light pole and you get better coverage across the street and don't effect that light pole or that area, which would be your preference?

Timothy Asta-Our preference is to go where the carriers need us to go. Early on in our evolution as an organization we tried to work with municipalities and put together a proactive plan and say here is where we think these sites would be less intrusive. And the carriers said, that's well and good, but we're fine over there, we don't need to improve the coverage capacity, so using utility poles and streetlights exactly where they need them; sometimes theres no rhyme or reason to it. You would think why would we put a node down here where maybe nothing has even been built there yet. Maybe there is a corn field on one side of the road. That is where they (Verizon) needs to improve their sites. But once we get into that target area, we can try to find the best solution. As a utility, we are directed to operate within the public right of way. Going into private property

and going into buildings changes everything as to who we are as an organization. We do not really operate on private property. As a utility, we are in the public right-of-way.

Jim Rawlings-Will this technology have an effect on either reducing the number of towers or slow down the construction of new towers eventually? Maybe in 20 years all these towers will go away.
Timothy Asta-That was a lot of the discussion last night as well. The towers.

Jim Rawlings-what effect will this have on construction of or lack of construction of towers in the future?

Timothy Asta-Looking at the map here, there are two distinctive project areas. To the north, Verizon is looking at College Blvd and Sprint is down around 143rd. In these two areas, I do not see Sprint or Verizon asking for tower sites. Is this intended to take towers down? No. This is actually augmenting and supporting those existing systems. That is why our fiber is actually routing back to an existing tower. Where they already have their head end equipment. But I do think what this means for you long term is if Sprint and Verizon have committed to this technology in Leawood, I do not see them approaching you for towers. What I see them doing is extending these else where through the community. They have committed to that now and I think that is a very good thing for your town. I wouldn't necessarily say that the towers go away. Actually that could be several years off as Jim mentioned. I understand you have a couple of municipal requirements-a 5 year Special Use Permit (SUP). Maybe when they come back to renew the SUP they are asked to look at extending the tax? I don't know. I think it reduces that probability.

Dave Ley-and you mentioned that last night about having more options and make the carriers go through.

Timothy Asta-Yes, you are putting ordinance amendments into Section 6-12; which is the wireless section. The wireless section of your Zoning Code right now is very tower specific. And it does not necessarily address this technology. So that is actually one of the things I think staff has been working very hard on. Trying to put some regulations in there for this type of technology. I suggested that you do what other communities in Johnson County have done and I actually provided it to Frankie in Legal. Directly from Overland Park's Ordinance, is a Zoning Code of a hierarchy and a new tower is No. 10 of 10. So in order for you to get to that point, you have to show why each NO. 1 through 9, does not justify your project. No. 1 doesn't have to be distributing an antenna systems. No. 1 could be an antenna not on an existing tower. But what it does is it actually makes the carriers really go through each scenarios using existing towers, using existing street lights, using existing utility poles, stealth technology. All those scenarios before they get to the point and if they can still justify the tower, well then darn it, it's needed.

Jon Grams-On either of these scenarios presented today, where does the fiber go to? Does it go to a tower? Where is the tower located on that map?

Timothy Asta-points out where Sprint has a need. Their actual tower is at the Blue Valley Soccer Complex at 135th & Antioch. They have towers on the sports lighting and then they have a huge compound where they have shelters and stuff. That is where they are taking Sprint back to. That is a couple miles. What you have here already connects with the network we have already built in Overland Park. It's already up. We are on about 20 nodes already in OP and in Olathe. They are already built.

Timothy Asta-Verizon is different and in their instance, we see different equipment. Verizon has a requirement. Even though there is about 20 Verizon nodes here, they can only have so many going back to a switch, or a hub. Five or six. Actually what you have here down along State Line Road, they have a tower in KCMO. This will route back here (Walmart at 135th near State Line Road). This portion will terminate back here (points to map)...this was not in your jurisdiction, so we did not include on this map display. These nodes will probably go back to another tower site and other nodes will go to a different tower. That allows them to channel their capacity into

different switches because the reality is, Verizon is not keeping up (they are really not) providing the 4G they say they are and this is hopefully going to fix that for them. If you look at the maps, we tried real hard to stay on main roads. We only have one location where we are in a subdivision near 156th Street and it's actually a good intersection location in the subdivision where we found a pole that is not in front of someone's picture window. That is the only one where we are in a development. Along Roe, we have tried very hard to stay on main roads. It may change. There are a number in Overland Park where we are in the subdivisions.

Andrew Osman-so it's noticable that everything is to the south. Is there anything north of College Boulevard?

Timothy Asta-Not yet. That is a big question. Last night one of the Commissioners wanted to see our five year plan. And I said I don't think Verizon is going to share that with anybody.

Andrew Osman-So you brought up what happens to towers in a couple of years? So we have a tower at 97th & Lee at the old Police Station. What happens if that goes down to the area? What happens if you take down a tower and don't replace it with anything? And if it is still there, will you need these amenities to go up and down on the light poles in the north part of Leawood, where homes are built much differently than the southern part of the City?

Timothy Asta-Well they are going to need some type of service platform up there. Is the tower coming down? I don't know that area.

Joe Johnson-It is our tower. There has been talk about us, when the SUP runs out, but yea that is the question. I do not know what carrier is up there. I do not know if Sprint, AT&T or Verizon are on the tower. If they are not then it really doesn't make any difference.

Timothy Asta-Well they will need to find a solution if it's going away.

Joe Johnson-Yes, but if the tower is going away, if it's AT&T or Verizon and Sprint are on that tower and the tower goes away then the signal needs to come from somewhere else.

Chris White-Well this could be a conversation if the SUP runs out then why continue the tower verses other alternatives.

Timothy Asta-You put yourself into a precarious legal situation as a municipality trying to show preference as much as I would love for you all to give me a big hug and say this is terrific, we're going to embrace this; you can't show preference for this over towers. Which is the reason why I think the heiracy in the Zoning Code is kind of a sneaky little way to force the carriers to try to use less intrusive applications. And the cities are always on the top of the lists, theres no reason you shouldn't get some revenue from them being on a City property.

Marsha Monica-What is the expectation from this committee? And are you asking us to look at different options and make recommendations? Are you saying we need- like is it going to be these little nodes on the light poles or are we going to have to do some with the big box?

Joe Johnson-The question is, when you look at the different options: (because they are going to go on one way or the other). What we are trying to figure out: Are we better with the boxes on our street light poles, minimizing the ground structure and having the ability to then put that ground structure in the back yard around another utility box or move it to an area that is not out front? OR Do we not like it on the street light poles and rather deal with the big boxes within our right-of-way or the Utility Easement and landscape?

Marsha Monica-I'm seeing there is not one option that will always work. Can we say we don't want one of the options at all? From an installation standpoint. If we say no big boxes in Leawood, then can you make the necessary installtions you need only using the street pole?

Timothy Asta-We would prefer to actually have the equipment on the pole. We would prefer to not put big boxes. It is actually less expensive for us. We do not have to maintain as much

landscaping. In reality, that actually is one of the biggest challenges we have. A lot of these sites are not successful in water. So we then would have a significant cost of having a landscaper come out and water this stuff. It's a big deal. I realize that may seem trivial to some folks.

Marsha Monica-No it is a big deal.

Timothy Asta-If we can eliminate the large cabinets on the ground we would like to do that.

David Ley-With the KCPL poles they do not have a choice, they have to put the large structure.

Marsha Monica-That is my thought. So if it is a KCPL Pole, it will be a large structure.

Timothy Asta-That is true. One of the things we are very aware of is your active plan to remove the KCPL poles in certain parts of your City. We've been working with Staff on that and if those are going away in an eminent fashion next year, we will propose a light pole, even if a light pole does not currently exist. So that is something we are working very hard to do, to keep this as unobtrusive as possible. At the end of the day and I think it is appropriate that you and the Planning people realize there could be a situation where the site dictates the solution. And we need to have that flexibility. As a City Planner when I was working at the staff level, you always want to put things in a nice little box and say you've done your job. That doesn't always work. I think you need the flexibility of staff being able to go out with us in the field, not looking at photo simulations on a screen and saying I agree in this specific instance, the better solution is "X". We need to have that flexibility. And any future carriers coming along that may not be with us. Sprint could come to you and say, hey, because we are local to KC, we are coming to talk to you independently. You need to have a regulation that allows you to work with anyone in that manner. So being overly restrictive I think is difficult to do. You need to have some size requirements the Planning Board talked about, some weight requirements, maybe everything painted to match. They actually had six design considerations they were talking about putting in the Ordinance:

1. restrict the number of antennas that can go on the pole
2. the size of the antenna or the overall increase in height of the antenna
3. the number of radios that can be allowed on the pole
4. the size of the radios, the configurations
5. whether it's ground or pole
6. the exterior color

So I think the Planning Board is actually working very hard to put those considerations in place through an Ordinance.

Timothy Asta-I think in this case because we are on traffic pole structures- because we are in the right of way, that is probably where you folks come in. We value your feedback, because we believe this is an long term investment in your essential infrastructure and we hope to have your support. There will be some scenerios where maybe of the 25, 20 of them look a certain way and 2 or 3 of them are different because that specific site demanded it.

Chair Rezac-there are a few more questions yet, but wanted to ask a quick question. Her question is about ownership. KCPL owns some of our poles.

Joe Johnson-We own all of the street light poles.

Chair Rezac-But then I heard someone say we are going to replace some of the poles? Who owns the ones that are going to be replaced?

Joe Johnson-they are still ours (The City).

Chair Rezac-and ExteNet is replacing them?

Timothy Asta-Correct, the way the agreement is drafted with the City, you always maintain ownership of that street light. ExteNet has to pay the bill to replace the pole to pay for the new one (to do all that). That cost is not on the City at all. And you also get paid a rental fee to go on your

light pole. So in some cases (Montreal is my best example where we have done this); they were actually in a position to replace a number of their light poles and they ended up getting 300 new light poles from ExteNet as a gift.

Joe Johnson-The only time we would need the big box is where their facility goes on the power pole and that is because KCPL will not allow attachments to their poles.

Jim Nevens-KCPL requires five foot of separation from their power and the antenna. So they actually replace the pole with a five foot taller pole in the same spot to make that separation from the primary power. We do not have that limitation on street lights.

Timothy Asta-We have about 20 KCP&L poles built in OP right now. They were just mandating that no height increase exceeds 20%. For example, if a KCP&L pole was 40 feet to begin with, we could not go beyond 48 feet to the new pole up and the antenna. So to Jim's point, if it was a 40' pole, they put a 5' taller one in (that's 45) my antenna is 2', (I'm at 47) and I'm safe. Because I didn't exceed 20% increase of the original structure. That is one of the requirements that I also think is a good idea.

Marsha Monica-If you look down the street then, is it going to be 40, 40, 48, 40, 40, 48?

Timothy Asta-They actually cannot build their distribution system with that large of an increase, so no, you will not even notice it. What you will notice is the antenna; which is slightly taller.

Timothy Asta-Several months ago, I spoke with Scott Lambers, City Administrator and he was going to go look at one that is built on Quivira. He called me back and said he couldn't find it. And then when I told him, he said OK now I see it when I come in the corridor. They are pretty discreet.

David Ley-They are down 143rd Street from Metcalf all the way through Olathe. I drive that every day, they are not that noticable on the power poles.

Ken Conrad-Sounds like the Planning Commission is all over a lot of the issues. I think that what has always been the issue is the ground mounted really more. When we did the cell towers years ago we went through antennas and this and that and I think most people now don't even see the things. Driving down Mission Road, I looked at this one just south of I-435, that is so cluttered with different kinds of antennas. We used to debate for hours with what the antenna was going to look like. But as far as the pole, you said you are recommending a different pole-mainly for structural reasons. How big is that and how much will it accommodate? This is back to that pre-planning. I almost believe that if you have one of these it would be better if we did have multiple antennas on a pole. How big is this different pole and what is it going to accommodate?

Dan Kerr-It's the same. We do not use seven inch base poles. All the poles are the same. We use a ten-inch base for a 40' pole. It just has a thicker wall. We use an 8-inch base for a 30' pole and again it has a thicker wall. You use some 7" base poles, we replace those with 8-inch base. The same light arm is attached, it doesn't look any different. It's a little thicker and the pole itself maybe a foot, a foot and a half taller, so we can attach the brackets above the light arm.

Ken Conrad-But it's basic accomodation is for one antenna on the pole.

Dan Kerr-One antenna and up to for radios, so it has the strength. The antennas themselves are a three sector antenna but you can have four inputs. So one antenna will accommodate multiple radios. Having multiple antennas on the poles, you would have two big things up there catching wind and it would be a structural problem, we might have to go to a significantly bigger pole to do that.

Joe Johnson-You could have multiple carriers.

Timothy Asta-We wouldn't want to put something that becomes a safety hazard or a blight.

Ken Conrad-I understand. It seems the pole mounted antenna mounted higher would be better. So if you need to have a bigger... I mean the radio a little higher would be better.

Abbas Haideri-Is that a technical reason?

Ken Conrad-It's the maintenance access, right?

Timothy Asta-That's part of it, the higher up you go, the stronger the pole has to be.

Ken Conrad-I understand. I think we ought to think about these new poles to try to accommodate the most optimal visual situation. I think that lower piece will be more visually seen. Give some thought to the pole on where aesthetically where you want to put the radio.

Timothy Asta-One thing you ought to consider is if the item is higher on the pole, the only thing behind it is sky, so it's going to stand out more when you look at it from a distance. If it's lower on the pole, it will get lost in the clutter.

Ken Conrad-I'm not saying I'm right, just saying we ought to think about it. The new pole for the future and where we want to have some of this stuff. One more question. If we go to the radios. We've never seen what the now box is. You say a pedestal. There still needs to be a pedestal on the ground.

Timothy Asta-Correct. For Sprint, if we do mount the radios on the pole, its 1 foot by 1 ½ foot. It's like a small telco ped. About 400' away.

Marsha Monica-It could go back to the other utility boxes in the area.

Timothy Asta-The Verizon one is actually 24" x 21" so it is still pretty small; and it can go 400'.

James Azeltine-You said earlier about the ground boxes and you said (and I don't know if you were talking about antennas or radios). You said if you put more of the structures on the poles you can get rid of the box? Did I hear that right? Can you give me an idea of how many more structures on the pole making the ground structure more small, is there a formula?

Timothy Asta-They become much much smaller.

Dan Kerr-the ground structure has to have batteries in it and AC/DC conversion. And that is the only thing to handle the AC portion that we have to have on the ground structure if the radios are on the pole.

James Azeltine-If you put an extra radio on, does that cut the size of the box in half?

Dan Kerr-No it does not. I still have to have a box of a specific size for all the power requirements; almost regardless to how many radios I have.

James Azeltine-So you can't reduce the size of the boxes by adding structures to the pole.

Dan Kerr-No.

Marsha Monica-You can by adding them, you can cut down from the 48 x 6 foot or whatever.

James Azeltine-that's not what he just said.

Timothy Asta-Let me answer you again.

Carrie Rezac-if it has the radio on the pole then the box is smaller (on the ground).

James Azeltine-If you add a radio you can reduce the size of the box.

Timothy Asta-I have two scenerios. Radio on the pole or Radio on the ground.

Radio on the pole equals a small box.

James Azeltine-And the radio on the pole would be in addition to the antenna. So if you put the radio on the pole in addition to the antenna, how much smaller does the box go?

Dan Kerr-I think it goes down by about 1/3.

James Azeltine-so it goes down by 2/3'rds.

Dan Kerr-Yes, Correct.

Ken Conrad/Marsha Monica-Plus it can be 400' away.

Dan Kerr-The antenna is at the top of the pole. The radio is lower on the pole.

James Azeltine-To me it's much more desirable to have something on the pole than to have something on the ground.

Group: And we agree.

Andrew Osman-I want to go back to the macro level because this is something we are going to be looking at as a Council in the next few years. And help me understand, you have a tower at a certain location. You have already talked about logistics and what happens when you take a tower away. What happens if you reduce that tower size down 10, 15, 20 feet from what our current Code is down to a different level. Does that change what your company does to adding additional sites around the area because you can't get the coverage? Is that increasing the size of those units to get the coverage, what is the combination or factor there?

Timothy Asta-To understand your question...Let's say there's a monopole (a monopole is 150' tall) and that I believe it has been discussed as those units come up, certain people like and certain people don't like that height. So you reduce it down from 150 to 130. What does that do to the overall coverage to then translate back to your company to say "we need more poles", it does not affect it whatsoever. It does not affect me directly because I'm not on that tower. But my customers are on that tower could now call me and say they need help here now and they need more areas covered here.

Andrew Osman-I think it's important to put that in the notes for our consideration a year or two from now; when we are looking at that.

Timothy Asta-One of the things I'm very honest with people about and I know you folks approach towers very differently; towers going away, that is a pretty tough topic. The tower owners and the carriers are going to kick and scream because they still need those. Not only for the height, but at the base of that tower, they have millions of dollars worth of equipment and that is still necessary for the network to interact. And that is what we are patching into. So towers going away is pretty unusual. But if it's you refusing a tower, I could see some of the carriers having some needs and other carriers saying it doesn't effect us because we also have other sites to protect us. I think it would be on a one by one individual carrier basis as to how it will impact them.

Jim Nevens-As it is today, each line of antennas is a carrier. All the sites are interacting with each other.

Timothy Asta-It is not always coverage, sometimes it is just capacity to add that additional robust component to the network.

Ken Conrad-If the radio goes on the pole, can the battery and the power supply go in a vault?

Jim Nevens-In the pole, under ground?

Ken Conrad-Yea.

Timothy Asta-Typically no because there is too much moisture, it could flood. It is much more expensive and I think in order to mitigate danger...

Ken Conrad-But it could. Such as applications on the Plaza, there are some in vaulted sidewalks. Okay, that's all I needed to hear. It can go in a vault.

Timothy Asta-Yes, it could, I know they put transformers around here in them I think you have to look at the individual site.

Abbas Haideri-Is it okay to ask the cost of one of these assemblies? Since you have said so often that it is very expensive; what is the cost?

Jim Nevens-A node is anywhere between \$30,000.00 to \$50,000.00. For one site, just for the equipment. The carrier sometimes provides the equipment, each one of those boxes could be

\$30,000 to \$40,000. So in some cases, greater than \$100,000. Per node could be around \$150,000.00.

Chair Rezac-In summary, our assignment said to review. Obviously Staff and Planning Commission are still looking at the request. This group's recommendation and Minutes can be considered by others reviewing this.

Joe Johnson-Yes, this can go to Planning Commission and City Council for approval yet as well.

Marsha Monica-the 400 feet away is key, the visual effect is key.

Jon Grams Motioned to recommend as much as possible those locations where all the equipment can be put on the pole with the smaller boxes; and ground equipment within 400' of the pole. (If that cannot be done then obviously a larger box). Recommendation is as much as possible, on the pole, small box within 400'. That the boxes color wise, be compatible with the poles.

Marsha Monica added that it sounds like the Planning Commission has identified in addition to color and height and number of boxes other specifications as well and this group supports defining those more definitive requirements.

John Burge seconded the Motion; all members were in favor with the recommendation.

Joe Johnson: Another item explained how the Sample Agreements in the packet would be a little different for Leawood, as Overland Park for example owns their own fiber. The Agreement for Leawood would be similar as it relates to having these utilities on our street light poles. Staff and the City Attorney are comfortable with the Agreement. We have spelled out areas for bonding and utility removal etc. Also there are items addressed on the original Franchise Agreements.

- **Chair Rezac added a housekeeping item for decision as it relates to regularly scheduled meetings of this Committee.** Due to a conflict of Chair Rezac, who also is on a State Commission Board that meets on the same Wednesday as this Committee; Chair Rezac asked if the first Wednesday of the month would be agreeable to the Committee Members. All members were in favor and as of July 2014, the next meetings and all thereafter will be moved to the first Wednesday of the month.

Chair Rezac adjourned the meeting at 8:42AM.

Minutes transposed by: Julie Stasi, Leawood Public Works Department