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**MURRAY CITY MUNICIPAL COUNCIL  
COUNCIL INITIATIVE WORKSHOP**

A Murray City Council Initiative Workshop was held on Tuesday, March 5, 2013 in the Murray City Center, Conference Room #107, 5025 South State Street, Murray, Utah.

**Members in Attendance:**

Jim Brass	Council Chairman
Dave Nicponski	Council Vice Chairman
Jared Shaver	Council Member
Darren V. Stam	Council Member
Brett A. Hales	Council Member

**Others in Attendance:**

Frank Nakamura	City Attorney	Janet M. Lopez	Council Staff
Jennifer Kennedy	City Recorder	Charles Crutcher	Power
Justin Zollinger	Finance Director	Doug Hill	Public Service Director
Jennifer Brass	Citizen	Janet Towers	Citizen
Tim Tingey	Admin & Development Services	Kellie Challburg	Council Office
Roger Timmerman	UTOPIA	Pete Fondaco	Police
Blaine Haacke	Power		

Mr. Hales called the Council Initiative Workshop to order at 5:48 p.m. and welcomed those in attendance.

**Minutes:**

Mr. Shaver moved for the approval of minutes from the Committee of the Whole on November 20, 2012 and December 4, 2012. Mr. Brass seconded. All were in favor.

**Business Item 2.1**

**Micro Cell Development, Deployment and Revenue- Darren Stam**

Mr. Stam came directly from a Utah Telecommunication Open Infrastructure Agency (UTOPIA) meeting. He has spent a lot of time at UTOPIA, and there are a couple of different things going on in the technology industry.

One of the problems is that everyone has an iPad or smart phone and it is overloading the system. A company, like Verizon that has towers spaced every so often is finding that their systems are overloaded. Currently, they pay approximately \$7,000 a tower, and in order to provide more bandwidth to keep up with the demand, they need to put in more towers. The problem with the towers is that they are big, bulky, and very expensive. Also, nobody wants a big tower in their backyard, even with efforts at camouflaging them.

Efforts are to try to get broader coverage, with less of the bulky equipment. Mr. Stam showed a version of a small cell broadcaster. Companies would like to put 3 or 4 of these on a pole, and that would service 10 to 20 houses in that area. Mr. Hales asked about Wi-Fi. Mr. Stam said these would be used for any type of smart device, and project it out.

The problem is finding a cost-effective way to provide more bandwidth. Mr. Stam explained how he had called Verizon and asked why he was being forced into a data plan, and they said that the reason was they did not have the bandwidth.

As a City, there are two ways to approach it:

- The City can sit back and wait until companies come, or the
- City could develop an ordinance and lay out the red carpet for them.

If the City provides this, then providers will come to Murray first and the City will build a revenue stream. Mr. Hales asked if it would bring businesses to the City. Mr. Stam replied that he didn't know if it would bring business, but it would get done in our City first, and build revenue. Mr. Shaver asked for a clarification on whom "they" is referring to. Mr. Stam said that "they" is Verizon.

Mayor Snarr asked if the City would then be open to allowing anybody to attach to the City's poles. Mr. Stam said that the City already does that. This would set it up so that the City gets the revenue stream, or wait until they come and possibly lose the revenue stream if they choose to put it on private buildings. Mr. Shaver clarified that the City would allow whomever to attach to the City's poles with their equipment, and whoever it is, is charged per equipment. Even if there might be three telecom companies on one pole. Mr. Stam said yes and theoretically the City could get \$700 per pole. Mayor Snarr commented that these were needed at the University of Utah because of the poor cell coverage with AT & T.

Mr. Stam said some of the information is included in the packet, and introduced Roger Timmerman from UTOPIA.

Mr. Timmerman demonstrated what is called a light radio. This is not something that Murray or UTOPIA would buy. This has been developed for Verizon, AT & T, or similar customers. They need power and a fiber, and a location to place them on. It is normally a huge hassle, getting the land and erecting their own towers. If they can go to the City, and have one agreement with a standard fee, then both parties are happy.

This presentation hasn't been created for the City, but makes some good points. A Multiple Service Operator (MSO) would be a network provider such as Xmission, UTOPIA, or Xmission on UTOPIA. The industry straddles some lines. Mr. Shaver asked what an ALU was. Mr. Timmerman said an ALU stood for the company, Alcatel Lucent. They provide the equipment. There are other competitors, such as Motorola, Sony, Emerson, etc. Mr. Nicponski asked if the agreement would be with Alcatel or Verizon and AT & T. Mr. Timmerman said Alcatel is in the middle and trying to help the cell carriers. The carriers can't make a tower provide gigabyte speeds to every home in the neighborhood, the physics don't work. They can make 30 Megs per cell that shoot out bandwidth, but then you go into a stadium with 1000 people sharing 30 Megs, and it just doesn't work. They keep making advances in antennae's and LTE is the latest, but that takes you from 30 Meg to 100 Meg. It still isn't keeping up with demand. The new LTE isn't available for unlimited use, because they can't keep up with the bandwidth. The only approach they have is to do smaller and more towers. Mr. Shaver asked what a MNO was. Mr. Timmerman said a MNO is an AT&T or Verizon. There is a lot of skepticism and a lot of problems with this model.

Mr. Shaver asked if what they were saying was that if Murray opens the conversation, then the City would facilitate the discussion.

Mr. Timmerman said that a lot of the MSO's don't have the money to buy a billion dollars of spectrum, as you have seen Verizon or AT&T do. The only wireless that you see the local guys doing is Wi-Fi. They are installing that all over the place.

The MNO's are doing their thing and building these small towers, such as pico cells. It is a tower that supplies hundreds, not thousands. A carrier is probably covering a City the size of Murray with about 10 towers. As they go to small cell technology, they would have to go to 150-200. That become so inexpensive but delivers bandwidth to around 20 people. Now, there could be a wireline type of service but have it remain wireless.

They used to only have 100 towers per area, and that is expected to grow exponentially. Their desire to have access points for towers matches up closely with what Wi-Fi coverage looks like. The solution seems to be for them to work together. UTOPIA already is trying to provide connectivity for Wi-Fi providers and have a lot of access points throughout the City. It makes sense for the carriers to use these also.

Mr. Shaver asked if the idea was that MNO's are not interested in building towers, they are interested in bandwidth and connectivity and get as many of their customers connected with the greatest bandwidth that they can. At the present time, the only way they can do that is by creating a tower. The City has the towers. Mr. Timmerman agreed and said these are no longer 100 foot towers; these are just light poles and things that are already there.

Mayor Snarr said the City has upgraded the poles and made them higher. Mr. Crutcher said that all of the contacts are below the distribution level. Mr. Shaver asked what the distribution level was. Mr. Crutcher said that it was the area below the wire.

Mr. Timmerman said that the total cost of ownership would be better if the AT&T's and the telcos are working together. A lot of times, you see Sprint and AT&T having to build their own networks to get to their own towers. It makes sense to use existing infrastructure to do that. An MSO managed small cell offering that is made available to the MNO's could get \$7,000-\$9,000 per cell per year. That is not their number, it is the guy in the middle (Alcatel Lucent)'s number. He wants to sell the equipment to the one side, and the connectivity to the other side. The number that seems to work for both of them is in that range. There would be a few of the boxes on each site because they are directional. Mayor Snarr asked if they needed a platform to sit on. He said they are attached to the pole with a bracket.

Mr. Brass asked about having one more thing on a pole, and if the guys have to climb over that to do repair work. Mayor Snarr asked about the frequency of climbing poles. Mr. Brass commented that the poles would need to be climbed in the case of an earthquake, and losing the ability to get the trucks there, and also in the backyards. Mr. Crutcher said that typically they repair them from the buckets, but there are times when the poles need to be climbed.

Mr. Zimmerman said that a pole may have 6 or 7 of these boxes attached. There may be a row for Verizon, a row for AT&T, and a row for Sprint. It gets a little cluttered up there, but now the revenue is \$21,000 per pole. Mr. Crutcher said that currently there are wires on the wood poles, but at this time the City has never allowed anything to be put on the steel street poles. Mr. Brass commented that most of the new neighborhoods are underground, so all that is available are street light poles. Mayor Snarr said that street light poles are serviced by boomer trucks.

Mr. Crutcher said that Qwest, Centurylink, Comcast and others only pay \$16 per year per pole to be connected. He believes that the \$7,000 rate is way too high, compared to the \$16 per year. Mr. Shaver asked if that figure was just out of the ballpark. Mr. Crutcher said that it isn't in the fee agreement. Mr. Zimmerman said that the fee can't be tied to attaching something, but for the connection and providing the power. Some use more power than others. Mr. Brass commented that it could be an expense if it is connected to a light pole but isn't light pole voltage. Mr. Crutcher said that some of the circuits on the lights are a single photo cell which goes off during the day and shuts down the power.

Mr. Hales asked if other places were doing it right now. Mr. Timmerman said that is being used in large cities, such as New York, Los Angeles, San Francisco. The higher density places need this or the network will fail. The demand is skyrocketing to other cities. AT&T isn't here saying that they want this today, but the intent here is to have a model when they do show up. Then, the City will know that they are getting every dollar that they could have. The carriers have said that this approach is necessary and they are doing it where they have to now, and will do the others when they have to.

Mr. Nicponski asked if the price was consistent between the other cities. Mr. Timmerman said that it was consistent, it just varies on the number of poles.

Mr. Stam said in the paperwork sent out, it states the millions of dollars spent this year in deploying this. Mr. Shaver said that the City doesn't have to maintain it, but it does create an encumbrance for the personnel and every pole is not going to work. The intent today is to look at it and get some real numbers, not to decide today.

Mr. Stam said that the City has expenses that are growing, and it would make a big difference in the bottom line to have a substantial income. He would rather be on the leading edge and bring it in, then be reactive and losing out. Mayor Snarr asked if it could be taken into an industrial park or an office environment. Mr. Timmerman said yes, but that this still requires a fiber network nearly down every street. There are two large areas that advertise UTOPIA that he was thinking about.

Mr. Stam said to remember this is not providing wireless services for people's home computers, etc. This is providing services for AT&T and Verizon. Mr. Brass commented that it is a smart phone or an iPad with a data connection. Mr. Hales asked if the data connection was needed. Mr. Stam said that they now sell wireless hot spots that this would be working on. Mr. Stam said that you would need to have a data plan to be able to use it. It isn't a wireless product.

Mr. Hales thought he had read about a similar product but it was wireless, similar to a wireless city. Mr. Stam said there are companies doing that. Mr. Hales said he was under the understanding that these cells did both also. Mr. Stam said these cells are more for telephone service. Mr. Zimmerman said there have been a lot of projects that try to do mesh wireless, which means that you feed one with fiber, and it feeds the next one wirelessly. The problem there is that you are sharing bandwidth back to that one wired connection, and that is what they are trying to get away from. That is the main restraint; they don't have enough bandwidth. Mr. Hales asked if they will come out with that soon. Mr. Zimmerman said they will do the wireless where they have to; you can always shoot point to point. A lot of the towers are that way today, you will see a little microwave dish and then you will see the antennae's. It is just too expensive to connect to those with a wire. They are trying to rip those off as fast as they can, because they don't provide enough bandwidth. This is the next step beyond that to connect them closer.

Mr. Shaver asked how many poles would cover Murray. Mr. Stam said that Mr. Zimmerman said 100 to 150. Mr. Zimmerman said that the trend of utilization is growing exponentially; you will see the micro cell development take off. It doesn't even have to be that high to justify this.

Mr. Nicponski asked how many residential units will be serviced by one box. Mr. Timmerman said that there are different numbers. He has heard as high as one box for 10-20 homes or one for 100 homes. They would come in and start with smaller numbers and grow from there.

Mr. Stam said it is important to look at the dates and the amount of usage that is growing. From 2013 to 2017 the numbers jump from 100 to 2000. The question is how many of those will Murray have at revenue of \$7,000 per year.

Mr. Haacke has a few concerns and would like the Power Department to be actively involved in this investigation. They have a responsibility to protect their poles. Some concerns are:

- Whether there will be conduit going up the outside of the pole, and will it be attached to the pole?
- Will the integrity of the poles be compromised?
- Will there be drilling into steel poles?
- How much electrical usage is it, and will it overload the control wires? Sometimes the wires are small and not heavy-duty, and what would the draw on those be?

Mr. Stam said the intent is to find out what is happening and what kind of revenue stream there would be and come back and design something that fits the City and the City can benefit the most from. Mayor Snarr said he would like to see how the other cities are doing it. Mr. Stam said it includes working with the Attorney's office and the Power Department to see what works best for the City. He doesn't want to force something on the Power Department that they don't like, but yet if it turns out to be a dollar benefit that brings in \$1.5 million to the City, it is something that the City cannot not look at. Mr. Shaver reminded them that right now the City can just control west of 9<sup>th</sup> East.

Mr. Stam said this is something that will take a couple of months to figure out.

Mr. Tingey added that as they are looking at this process, they would want to make sure the zoning regulations are in line. He doesn't see it as an issue, but there are certain regulations the City has related to cells and towers. Even though these are small, staff would need to make sure that none of the existing regulations would prohibit this. Mayor Snarr commented that he has taken a lot of heat from cell towers.

Mr. Stam said he would work with Mr. Nakamura and UTOPIA and find out how it can be a benefit to the City.

Mr. Hales adjourned the meeting at 6:20.

Kellie Challburg  
Office Administrator II