



NOTES OF CRP BROADBAND INFORMATION SESSION

June 17, 2015 - Okotoks Council Chambers

AGENDA ITEMS:

1. Welcome and Self-introductions

Councillor Ray Watrin opened the session, welcoming participants to the Town of Okotoks and to the information-sharing session.

Shane Olson, Economic Development Manager for the Town of Okotoks, stated that as a Region we need to determine our collective interest in expanding affordable high speed broadband coverage across the Calgary Region and be clear about what we want to achieve together and what we should be advocating for. Today's conversation is not intended to focus on the technical aspects of broadband but rather to better understand, from community and regional perspectives, the full benefits of broadband. Then we can move on to examine what sort of roles any particular community might choose to take – whether it is owning conduit and/or fiber, being the landlord of fiber or a tenant of another fiber owner. Today our opportunity is to listen, to ask and to learn from others who are further along the path of building and advocating for regional and local broadband provision and we appreciate the willingness of our guests and presenters to share their experiences with us.

2. Regional (REDA) Perspective – Alberta Southwest REDA

Bob Dyrda:

- Alberta SouthWest is has the oldest demographics in the province.
- In Canada they are ranked #19 in terms of global internet speed (very slow speeds).
- There are conferences citing case studies on communities who have been successful in instituting broadband. Some are community-owned, some private, and some public-private. The big catch phrase in the States is let's 'gigafy America'. President Obama has even pushed the topic on YouTube.
- Austin Broadband Summit is sponsored by AT+T, Verizon, etc. FCC Chair Tom Wheeler pulled no punches at the summit citing specific examples where AT&T had taken a municipality to court. He called out the companies for such tactics in his keynote and received a standing ovation. More ironic, once he finished speaking, the gentleman who heads up AT&T in Texas had to follow him in speaking. The US is serious about



gigafying. They are all about competition. That will help adjust prices downwards and increase speeds over time, etc.

- There are 143 communities in the US that own community fiber networks and this number is increasing quickly. The Olds model is different than most of the models he has seen in the US.
- We are seeing a correlation between low broadband accessibility and low population growth.
- In Austin, Texas, they see fiber AS a utility. It is invisible.
- By way of example, on a recent weekend, Waterton Townsite campground had 300 connected devices – and this is for people who are camping! This is the same number of connected users that a hotel would see.
- Agriculture is now precision agriculture. Upload speeds are becoming as important as download speeds to support GIS-based vehicle guidance systems and modern farming techniques.
- There are new business models coming on-stream all the time. Like Air B&B, Alibaba (now larger than Amazon).
- The lack of growth in the Alberta SouthWest community puts infrastructure in those communities at risk – declining and aging populations cannot maintain levels of usage nor cover the operating/maintenance costs of existing infrastructure. In comparison, Lethbridge has nearly doubled its population in the last 30 years.
- Waterton is set to become connected this summer. The year round population in Waterton is 140 people. The key things they leveraged were that they capitalized on a Parks Canada initiative that said they needed to have all their offices in the Park connected by March 2015. The community jumped on board to leverage every opportunity to partner with Parks Canada in infrastructure provision, using a lot of grant money to do so.
- The next step is to work with TELUS for a fiber connection to Calgary and then partner with O-Net as their service provider (ISP). They will do residential in the next 3 years, because Parks Canada is doing all water and sewer upgrades within the next 3 years. Their business model will look uniquely different from others because of their unique geography and partnering with Parks Canada.
- There is no 'one size fits all' blueprint for how best to provide broadband networks and services in a community. Each situation will have different advantages, different barriers. In Waterton, for example, the operating cost will be largely carried by the tourism industry. They will buy streaming services and that will fund a lot of the project.
- It is really important to understand that Broadband is a community development initiative, not just an economic development initiative – it is as much about supporting a community's health, education, connectivity, quality of life / social interaction, and environmental goals as it is about creating new jobs or higher levels of income.



- He has seen just about every type of model reflecting the reality that each community will have its differences. The important question is to ask how did they do that, what were they able to leverage to achieve their goals? There is usually a distinct advantage that can be leveraged in each situation.
- In most cases in the U.S., those communities already owned an electrical utility. We have 3 municipalities in Alberta Southwest that own their own electrical utility. The United States has a lot more Coops (like electrical or telephone coops) that can be used to support and operationalize broadband utilities.
- A summary of 'why should we do this'? Includes improving healthcare and education, attracting families (important due to population stagnation in Alberta SouthWest).
- We need to leverage strengths, and work on timing.

Questions/comments

? Can you clarify what the Town of Waterton actually owns ?

Bob Dyrda replied:

- Waterton owns the municipal roadway; Parks Canada is looking to dig up the roads to install conduit – there's the opportunity for the municipality to install municipal broadband conduit, on an opportunity basis, as Parks Canada moves from road to road.
- Waterton had to connect to TELUS in order to get a fiber connection back to Calgary to connect to the internet (and O-Net as the ISP).
- Most communities will have Shaw or TELUS.
- Waterton is unique in that only TELUS served that community.
- It is one thing to build it out – you become a wholesale customer, instead of being a retail customer.
- All other 15 communities have multiple options – TELUS, Shaw, etc.
- Shaw is bidding at a lower price for next year. Shaw is TELUS' #1 customer.

? Once a community hooks into TELUS and has the ability to connect back to Calgary, do they have the option of hiring O-Net?

Bob Dyrda replied that in Alberta, the only company that will run their services over someone else's fiber is O-Net. That is another differentiating factor between Canada and the US.

Holly Saulou replied that we may start to see that shift.

Bob Dyrda stated that as easy and small as the Waterton model is, there are still challenges. The way O-Net built their system from the ground floor – the US had federal money in the



billions to do so. Waterton is accomplishing it simply because of size and aligning their timing to the opportunities afforded by the Parks Canada investments.

3. Olds Institute (O-Net) “On the Ground”

Mitch Thomson:

- The whole purpose and mandate of the broadband discussion is to empower the community to achieve its success. They are a partner with many institutions.
- Look at community development in your town, looking for opportunities to enhance the community first. O-Net has over 150 volunteers and 11 Standing Committees. They have tried to tally what value those volunteers brought to the process. At a \$10.00/hour rate, it would reflect millions of dollars of dedicated expertise and effort from many corners of our community.
- They have been at this since 2003, and it didn't just happen in 6 months to a year. They have made their share of mistakes.
- The Olds Institute for Community and Regional Development is a sustainable community development organization. Through relationship building and civic engagement, they have provided opportunities to enable residents to make a meaningful difference in growing their community. O-Net is Canada's leading municipal internet service provider.
- They based outcomes on basic sustainability practices.
- Back in 2003-2004, the community was talking about what it needed to do to retain its youth, to be diverse economically and what it needed to do to succeed.
- You have to have strong relationships and a mix of the right people in the community. Look for possibilities and opportunities. Focus on relationships first. Have the courage to step forward and take action. Without action, it is just potential.
- The Operating ISP (internet service provider) pays a fee for using the network. O-Nets owns a network (like a landlord), and they own an ISP (like a tenant, paying to use the network to provide services to customers) – with separation between the two.
- The Provincial Government came to their community and engaged with residents as to how can we get the most effective use out of broadband. A challenge with copper systems today, the backbone of mobile systems, is that they won't be able to keep up. There is no mobility if there is no broadband. In the near future, cell phones will switch from 3G/4G to WIFI in order to reduce the amount of data trying to get out in space. We will also see WIFI calls, again, trying to reduce the strain on mobile networks. Canada is significantly further behind other countries and our issues are much greater.
- Olds will offer free WIFI very soon. They are 100x faster than an average community.



Joe Gustafson:

- The Olds Institute came to be in 2004. The Chinook School District is very large, and they were looking at how to expand.
- They received a total of \$2.5M from the province in a couple of grants. With that grant money you could not build network tangibles. The grants allowed them to build an engagement site at a local library. They started some of the soft stuff and paid for a lot of consultant time to look at the question “How do we do this?”
- The design of trunk lines and distribution also came out of those funds. The first idea was to create a dark (inactive) fiber network, and terminate it in a box somewhere. Shaw, TELUS, and local wireless companies were all there. But service providers were not interested in using Old’s dark fiber network (being renters).
- The O-Net partners believed in the principle of abundance – that people should have affordable access to as much bandwidth as they need to be able to do what they want to do. They couldn’t understand the policy of scarcity (of restricting broadband speeds, then charging extra premiums for incrementally faster speeds).
- They started a conversation on making the network a utility – recognizing the public interest to be served by an accessible, affordable broadband network.
- They had to focus on a financially sustainable model, and a replicable project other communities could build on. This project over time, has had the support of 3 different municipal Councils, all totally supportive.
- In the process, they have had bylaws passed, in addition to all governance pieces developed. The rules are in the bylaws. They have built an open-access network. Olds Institute owns the trunks and distribution network and is willing to rent broadband capacity to individual ISPs.
- A long time ago, they started having this thought – that the CRTC will come down the pipe someday, stating that all ISPs must have access to available fiber networks. If that happens, how do we charge to let other ISPs use the networks ? So they separated the two. Electronics and fiber (dark fiber) and services (provided by ISPs).
- O-Net will eventually make money. It is owned by a not-for-profit. This ultimately could lead to fewer taxes for residents.
- The network was designed on an assumed 30% take-up rate. This is conservative and replicable. However, they are revisiting that somewhat because they have had delays in revenue streams. Where the community has been willing to collectively embrace the broadband system as a tool for community and economic development, they have been slower than anticipated to make the switch to become “customers”, one household at a time.
- The network fiber is provided to the property line, and a new customer must pay to have it extended across the property to the building – and now you are operating on private property. Property owners must sign an access agreement to bring conduit to the side of the building. It takes different sizes of equipment to go into a person’s yard than to



trench down a roadway. On good days they saw two connections, and that delayed them. They were about 2 years behind in revenue projections. They also put in a television system that was less than stellar.

- Last year, they completely retrofitted everything in the (operations centre ?????).
- During the whole process they have had to make many decisions. How do you design and build a central office? Ethernet is single fiber. With a G-point system, you run a fiber to an access point and put in a splitter to split signal. They have a 1/14 signal, with a maximum of 8 people on fiber. They have extra fiber to every distribution hub, as they have overbuilt their system. The cost of Ethernet adds cost, as you have to have one fiber to every customer.
- Their biggest decision was to connect to Alberta SuperNet. That was the goal! Prices are coming down. Service is overpriced and underpowered, and very difficult and expensive to connect to. They are talking to Axia all the time. Things are improving and they are seeing new contracts being worked on.
- Biggest challenges in developing a similar system:
 - There is no template, no checklist.
 - Be careful what you say, and make sure that what you say, you do.
- They did apply for Google network but lost out to Kansas City.
- Olds has a telephone service that has free North American services, and they offer PVX services to businesses (40-50 telephones). They do all services for business. There is no capital outlay for any business. This is a cool benefit for businesses wanting to upgrade their business.
- Their TV has most channels. The PVR is all cloud-based and has huge capacity for recording programming. They now offer 'catch up TV' in which they record 60 channels for 24 hours. They also have Video on Demand and two community channels. They are working on emergency and weather channels.
- Home internet starts at \$20.20/month. For 1Gig, they charge \$120.00/month, and offer 2 terabytes of transfer. For most people, the \$20.20/month package is enough. Once you have experienced a certain speed, you will never go back to less. They look for and encourage as much bandwidth-hungry applications as they can find. Fiber never diminishes.
- Some of their proprietary features are available through collaboration with other companies like Shaw.
- (In Waterton, in contrast, they can be their own ISP, but they don't have their own electronics. This will be the first time a community will be leasing a system from TELUS.)
- O-Net connects to the Calgary internet exchange through the fiber they lease from Shaw. So O-Net can provide service (be the ISP) to anyone that can get a fiber connection to Calgary. Once a network is up and running, they will monitor it 24/7 from Olds.



- They have two 10G connections. Cheaper. More speed.
- They originally installed vaults, because they wanted everything below ground. This was a mistake. When it is 40 below and things have water in them, and you need access, you have to rely on a hydrovac. In the last part of their deployment, they went to pedestals. (NOTE – don't put a pedestal on a corner – it may get run over by traffic. Learning that lesson probably cost them \$100,000.) As you sign people up, you go into those vaults less and less often.
- They finally found a good company of just the right size, who can do now 10 installations a day.
- O-Net currently employs 20 people.
- There is a lot of programming to make the system work. They have capitalized on \$1.8M in labour to make things work and they offer a triple play (data, phone and video).
- When they hook up to Waterton, do they make a profit? Yes! Though they are not gouging them, they do need to properly recover costs.
- They are an open book and will help as much as they are able. If you are going to do a study, call him, because they have likely done the same study before.
- The Town of Olds has a Connected Community Committee. This Committee examined the culture of use – getting fiber into your community is a first challenge, but getting adoption by the community – with everyone knowing how to use/benefit from higher speed broadband services – is a second and equally important challenge to plan for. Mark Work wrote a white paper on culture. How do you transform a non-tech person to a person who loves tech and wants to use broadband ? They have 15 computer stations available for people to use up to 1gig. They also have mac pros, tablets, Xboxes, apple TV and 3D printers. They believe that the future lies in e-commerce. The number of business websites in last year has doubled, though they are not totally there. 46% of businesses have a website and things like blogging, Twitter, Facebook, are slowly growing. They are deploying WIFI throughout the community. The idea is that when I walk out of my house I seamlessly switch from my private connection to O-Net Public. This will only allow one device at a time.
- Every student on the Olds College campus has an iPad. They are one of two colleges in North America recognized for ingenuity in education using apple products.

Alexandra Ross asked when O-Net's fiber would reach capacity. Joe replied that they can split bandwidth and that the expansion capability of the fiber is, for all practical purposes, unlimited.

Joe (continuing):

- In Olds, for rights-of-way, they decided that the standard should be fiber. They have Access Agreements in place for the use of the network.
- Their break-even point is this fall and they now have 80% citizen acceptance.



- O-Net did this with all borrowed money. The residents of Olds do not fund this venture at all. Through partnership with the municipality, they were able to benefit from the municipality's unused portion of its allowable debt capacity.

When attendees to the meeting indicated that they would be interested in seeing any metrics O-Net had developed, Mitch replied that they are just gathering that data now, as they did not want to do so until they had finished developing the network.

4. Alberta SuperNet Update

Holly Saulou and Erwin Loewen:

- 15 years ago, when SuperNet was built, the Province was a leader in Broadband initiatives. When built, they offered public sector connectivity. A lot has changed and they have also learned a lot. What do we do next? We now have a key opportunity.
- SuperNet service allows Shaw and other service providers to connect to other communities. SuperNet plays the middle role. SuperNet is an enabler, but it is not the answer to everyone in the province.
- Broadband is about partnerships, contracts and how you pull the pieces together. For municipalities, the challenging part is when fiber runs just down the road and you ask "why can't I connect"? This is a public-private partnership to build an infrastructure that can be used, but how we use the service is dictated by contracts. There is opportunity in 2018 to determine what SuperNet 2.0 will be and to set the framework for the next operating contracts for SuperNet.
- There is no major strategy in government today that does not mention or make reference (in business plans) to broadband.
- The Province has indefeasible rights of use (of SuperNet) and has made an investment. They have agreements with both TELUS and Shaw. There is a cooperative partnership of not wanting to overbuild.
- They are looking at a new vision and are in process of briefing the new government. They have heard from municipalities that they need to have a way to access things like SuperNet.
- As SuperNet moves forward with a new contract the government has to take action now. They are looking at a collaborative approach to find answers; dialogue is important. The Federal government is also having a dialogue re: CRTC, and have launched discussion on April 9th of this year. CRTC wants Canadians talking to them as they cannot take action on their own. That is the beginning of turning high speed broadband accessibility and service into a utility in Canada.
- SuperNet will be responding on behalf of the provincial government. They urged everyone to advocate on behalf of their own municipalities.



- Canada does not have a national plan and one is needed.
- SuperNet is out there in most of the rural communities, but those populations will not viably support a for-profit model. Municipalities should look into 'how can we help'.
- They will gladly sit at the table to walk through pricing.
- The government is currently working on a multi-year strategy. As soon as that is releasable, we will talk again, as the SuperNet team will want input on solutions before the government moves forward.

5. Education and Training Perspective – Bow Valley College

Corinne Finnie:

- Bow Valley College is committed to being a world class innovative college, rooted in communities. Its mandate is to have 14,000 individual learners.
- They are trying to prepare learners to be ready for a digital workplace.
- The College's *Regional Stewardship Program* is about contributing to economic and social wellness for rural communities (small towns and rural areas). Bow Valley College works with grass root organizations, trying to bring programming relevant to each community they serve around the Region. They currently have 7 sites across the Calgary Region and are present on First Nations Reserves.
- With limited connectivity they are not able to do extensive programming.
- There is SuperNet access in Cochrane, Canmore, Airdrie and High River.
- Learner expectations have changed.
- They currently have 14,000 people on campus and use technology in every classroom. There is a lot of downloading and streaming, and access to eBooks. All create more pressure on bandwidth. In rural communities, they have to ask learners not to connect all at once. This results in a decreased learning experience and students are not happy as they pay the same tuition.
- The College's International Education Department is extremely busy. They offer training in India, Africa and the Caribbean. It is their desire to connect to those communities for training. The College recently had a delegation from Africa who wanted to deliver their programming right to Kenya. Bow Valley College has had to be ingenious in order to use technology to deliver programming to cohorts situated in different regions. They offer real time education through the internet and lack of bandwidth has also been an issue there. Although they have bumped up their service to as high as 40mgbs, it is not enough.
- Bow Valley College is trying to be a hub to other grassroots organizations and is a key player in delivering the Alberta-Canada Job Grant.



Bob Miller noted that both SuperNet and Bow Valley College are partners with the Calgary Regional Partnership, as are the Olds Institute and Alberta SW REDA. As municipal staff and Council members, you have now met some of the key partners, and when starting to think about broadband, you know who to talk to. We need to give some thought individually, and as a region, as to what we would like to do. The gap between the bandwidth “those who have fast and those who have less” is getting wider; providing access to high speed broadband (gigabit to the home) at affordable prices is a significant challenge and opportunity across the Calgary Region.

6. Panel – “Getting Started”

Bob Dyrda recommended engaging as much of the community as possible, finding as many possible partners. The project will require strong leadership.

Joe Gustafson said that you don’t have to build the whole town (with fiber) all at once. He recommended starting with one industrial park and then building from there.

Holly Saulou stated that it is all about partnerships and conversations. Understand what your community needs in relation to the rest of the world. Then, reach out to others who have done it before. They will be more than willing to help you find the answers. She also recommended finding excitement and passion in your community champions.

Erwin Loewen stated that it is all about leadership. Those making the decisions are not always the ones who ‘get it’. Ensure your leaders share their desires when speaking to Alberta Ministers.

Corinne Finnie advised that post-secondary education is Bow Valley College’s mandate across the Calgary Region through the *Regional Stewardship Program*. The limiting factor in doing so is broadband. Social wellness, community economic development, etc., all depend on fiber as it makes higher education accessible.

Meeting attendees stated that they were all appreciative of the insights shared today. They will return to working in the respective municipalities to re-examine the issue of broadband in order to determine what initiatives each community might choose to undertake. The Calgary Regional Partnership will continue the conversation at the regional level.



7. Closing Comments, with Thanks

Bob Miller thanked all panelists and participants for attending. Contacts will be shared with this group. Now that everyone knows who to connect with, it is hoped that discussions among this group will continue.

Bob Miller, Economic Prosperity Lead
and Manager, *Calgary Region Economic Development Alliance (REDA)*
Calgary Regional Partnership (CRP)
403.971.5938 Bobmiller@calgaryregion.ca