PEACE RIVER REGIONAL DISTRICT

REPORT

To: Chair and Directors   Report Number: ADM-BRD-165

From: Trevor Ouellette, IT Manager   Date: March 25, 2021

Subject: Starlink Low Earth Orbit Satellite

RECOMMENDATION: *[Corporate Unweighted]*

That the Regional Board receive the report titled "Starlink Low Earth Orbit Satellite – ADM-BRD-165", which describes the Starlink service, for information.

BACKGROUND/RATIONALE:

On March 11, 2021, the Regional Board passed the following resolution:

> *MOVED, SECONDED, and CARRIED*
> That the Regional Board be provided with a report on Starlink, to include technical specifications, feedback from local government users, and the process for providing increased broadband connectivity to rural communities in the PRRD.

Starlink is a satellite internet constellation being constructed by SpaceX providing satellite Internet access. The constellation will consist of thousands of mass-produced small satellites in low Earth orbit (LEO), working in combination with ground transceivers.

Starlink is ideally suited for areas of the globe where connectivity has typically been a challenge. Unbounded by traditional ground infrastructure, the promise is that Starlink will deliver high-speed broadband internet to locations where access has been unreliable or completely unavailable.

On February 24, 2021, several PRRD staff in the Dawson Creek area received invitations to join the beta (trial) program and order equipment. The satellite hardware is $649, plus $65 for shipping. There is a $129/month fee for the service, for residential or business use with unlimited data use. The PRRD paid a $130 deposit to sign up for service but has not received the equipment at this time, and it is unknown when the satellite hardware will arrive. The purpose is to set up a long-term testing site for reliability. According to Starlink, the service should be available in late 2021.

Starlink requires a clear view of the sky to connect and uses an Android or iPhone App to determine the best install location. There have been reports that the satellite hardware, once activated, can only be used at a specific service address. This limitation is due to how Starlink manages bandwidth for different users worldwide; therefore, testing will be limited to approximately 25KM from Dawson Creek. Additional units would need to be purchased to do further testing.

Starlink is now delivering initial beta service and will continue expansion to near global coverage of the populated world in 2021. During beta, users can expect to see data speeds vary from 50Mb/s to 150Mb/s and latency from 20ms to 40ms in most locations over the next several months as the system is enhanced.

Latency is the time it takes to send data from one point to the next. When satellites are far from Earth, latency is high, resulting in poor performance for activities like video conferencing, voice-over-IP, and online gaming. Starlink satellites are over 60 times closer to Earth than traditional satellites, resulting in lower latency and the ability to support services typically not possible with conventional satellite internet. As more satellites are launched and more ground stations are installed, data speed, latency, and uptime should improve dramatically. It should be noted that according to a recent news article, some users in Nelson, BC, have reported speeds over 300Mbps.

As of March 16th, there have been 1,325 Starlink satellites launched into space. Each satellite weighs 570lbs and launched into space in batches of 60. On October 15, 2019, the United States Federal Communications Commission (FCC) submitted filings to the International Telecommunication Union (ITU) on SpaceX's behalf to arrange spectrum for 30,000 additional Starlink satellites to supplement the 12,000 Starlink satellites already approved by the FCC. Starlink is looking to provide coverage for the entire globe by 2022. A live Starlink satellite map is available online at: https://satellitemap.space/

The Starlink beta (trial) program can be found here: https://www.starlink.com/

ALTERNATIVE OPTIONS:
1. That the Regional Board provide further direction.

STRATEGIC PLAN RELEVANCE:
☒   Advocacy
    ☒ Increased broadband connectivity for rural communities - Situational/Gap Analysis and Investment

FINANCIAL CONSIDERATION(S):
None at this time.

COMMUNICATIONS CONSIDERATION(S):
None at this time.

OTHER CONSIDERATION(S):
None at this time.