REGIONAL DISTRICT OF CENTRAL KOOTENAY

Water Smart Ambassador

Central Region Year End Report

West Arm of Kootenay Lake – Chris Black Photo

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Overview

2016 has so far experienced the highest average global temperatures recorded in our world history (NASA, 2016). In the year 2015, British Columbia experienced an extreme drought where temperatures breached the 40-degree mark for the first time in recorded history (Environment Canada, 2015). Over 60 British Columbia cities had record breaking high temperatures in 2015, with many previous records being established only within the two decades prior (Environment Canada, 2015). During the summer of 2015, many British Columbia regions experienced extreme water shortages, with highest level [4] drought conditions present in over 30% of the province (BC Ministry of Forests, Lands, and Natural Resource Operations, 2015).

The Water Smart Ambassador Program was developed by Columbia Basin Trust (CBT) to address high seasonal outdoor water use and help achieve the basin wide reduction goal of 20% in the Columbia Basin. The RDCK and the Town of Creston have participated in the Ambassador program for the past 5 years. There were an additional 9 communities participating for 2016. The role of the Water Smart Ambassador is to raise awareness of water conservation and engage local residents to reduce outdoor water use. In the summer months the Water Smart Ambassador provides free residential irrigation assessments and commercial building water assessments (Regional District Of Central Kootenay (RDCK), 2016).

The RDCK Central Water Smart Ambassador for 2016 was Chris Black, a first year Selkirk environmental planning student with a working background in commercial horticulture and agriculture. Chris worked from May 31st to September 3rd. The Ambassador was put to work in the following communities: Balfour, Woodland Heights, Duhamel, Grandview, Riondel, Woodbury Village, West Robson, Ymir, and Lucas Road.

Supporting the goals of each community, The Central Water Smart Ambassador travelled door to door, promoting efficient water use practices and providing free support services. Education and awareness was the primary directive of the Ambassador. Lawn and garden watering assessments were offered to residents, and water restriction information was provided via convenient fridge magnets. The Ambassador completed several projects during the summer, including residential and park watering assessments, bylaw monitoring, public education, radio and video interviews, information booths, informational pamphlets, advertisement campaigns, and a golf course watering assessment.

Bylaw education was a major part of the Ambassador duties. Residents who were watering outside of the water bylaw schedule (RDCK Bylaw No. 2470, 2015) were encouraged to modify their practices. The Ambassador noted that nearly every infraction took only one visit to regain compliance. It was also noted that during hot weather, instances of bylaw infractions were much higher.

Xeriscaping is the practice of planting drought tolerant and native plant species. This alternative landscaping method can reduce water use by over 50 percent (Columbia Basin Trust, 2010). Xeriscapes are ideal for homeowners, as they require less water, fertilizer and maintenance. The Ambassador promoted xeriscaping principles, and helped homeowners plan for future water shortages through smart landscape choices. For an example of xeriscape gardening, see figure 14.

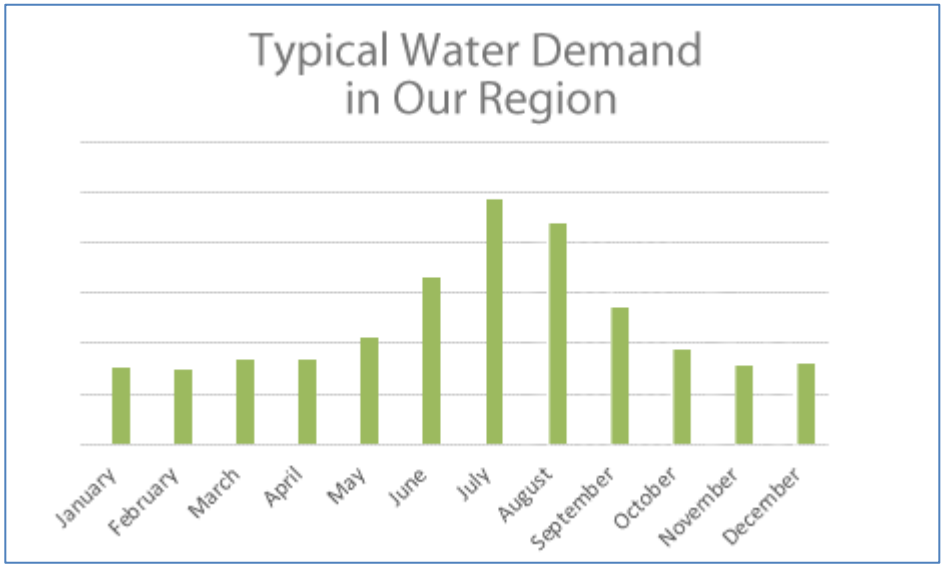

Figure 1 – Example of typical water demand ratios in the Kootenay Region (Columbia Basin Trust, 2016)

Participating Communities and Water Systems

Balfour

Balfour is a suburban community located 32 kilometers northeast of the city of Nelson. The population of Balfour is approximately 480 residents (Statistics Canada, 2006). The water system in Balfour is the second largest RDCK operated system with 255 service connections. Kootenay Lake provides the water source, with a wet well intake located 215 meters from shore. Maximum flow to the water treatment plant is 18.6L/s (300gpm US). A steel reservoir with a volume of 435,000 liters provides storage for treated water (RDCK, 2016).

Woodland Heights

Woodland Heights Subdivision is located in the community of Taghum, located 9 kilometers west of Nelson. A ground well provides the water source, with a flow rate of 0.6 - 1.77L/s (10-28gpm US). There are a total of 21 service connections to this system. A concrete reservoir provides storage with 155,000L of capacity (RDCK, 2016).

Duhamel

The community of Duhamel is located 12 kilometers northeast of Nelson. A ground well provides the water source, with a flow rate of 16.8L/s (266gpm US). 545,000L of storage is provided by a concrete reservoir. There are a total of 93 service connections (RDCK, 2016).

Grandview

Grandview subdivision is located 30 kilometers northeast of Nelson. The source of water is Kootenay Lake, with pumps providing a maximum flow rate of 5.7L/s (90gpm US). There are two in ground concrete reservoirs with 233,000L and 252,000L of storage capacity. Grandview water system currently has 20 active service connections, with a potential of 84 connections in total at full build out (RDCK, 2016).

Riondel

Riondel is a small village located on the East Shore of Kootenay Lake, 9 kilometers north of Kootenay Bay ferry terminal. The year-round population of Riondel is approximately 273 people (Statistics Canada, 2011). The water source is Indian Creek; which gravity feeds the water treatment plant. There are a total of 198 service connections on the Riondel water system, including one 9-hole golf course (RDCK, 2016).

Woodbury Village

Woodbury Village is a small community located 55 kilometers northeast of Nelson.
The water source is Kootenay Lake, with a wet well intake located 90 meters from shore. Storage capacity is 272,765L, provided by an in ground concrete reservoir. There are a total of 40 service connections to this water system (RDCK, 2016).

West Robson

West Robson is a rural community located 47 kilometers southwest from Nelson, or 8 kilometers north of Castlegar. The source of this water system is two ground wells. Storage capacity is provided by a 318,00L steel reservoir. Design operating point is 15.1L/s (239gmp US). There are total of 105 service connections on this water system (RDCK, 2016).

Ymir

Ymir is a small town located 29 kilometers south of Nelson. The population of Ymir is approximately 231 people (Statistics Canada, 2011). The system source is surface water supplied by Quartz Creek. Storage capacity of 225,000L is provided by a steel reservoir. There are a total of 107 service connections on the Ymir water system (RDCK, 2016).

Lucas Road

Lucas Road is home to a small community located 45 kilometers southwest of Nelson, or 2.5 kilometers west of Castlegar. The water source is supplied by the Columbia River via the City of Castlegar. There are a total of 5 service connections on this system (RDCK, 2016).

Historical Weather Comparison

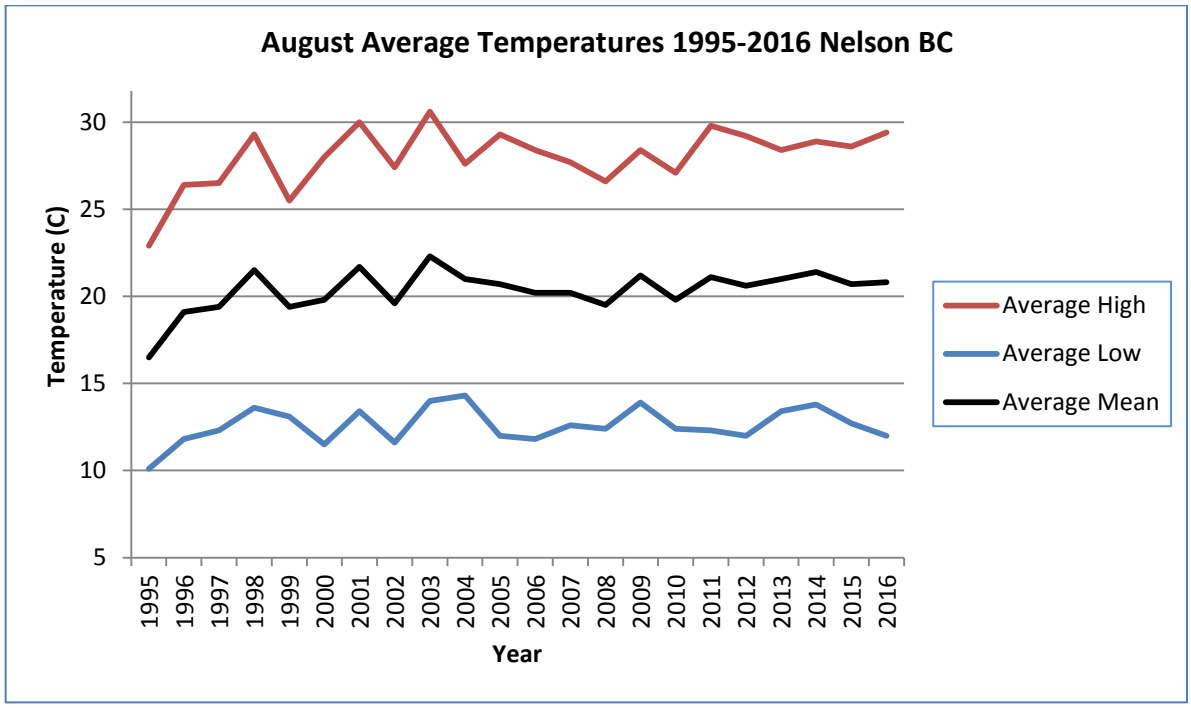

Figure 2 - Nelson BC August temperature averages 1995-2016 (Environment Canada)

August of 2016 saw average temperatures slightly above normal levels (see figure 2 and 4).

Precipitation Levels were in the normal range for August 2016 (see figure 3 and 4).

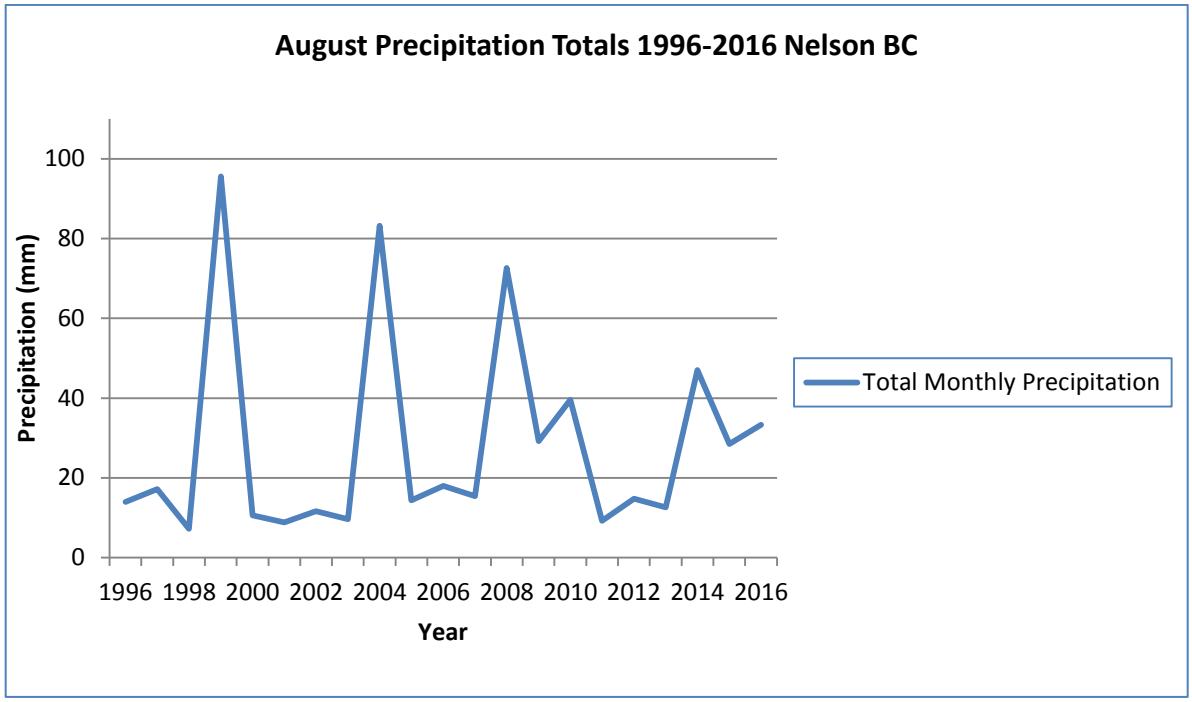

Figure 3 - Nelson BC August precipitation totals 1996-2016 (Environment Canada)

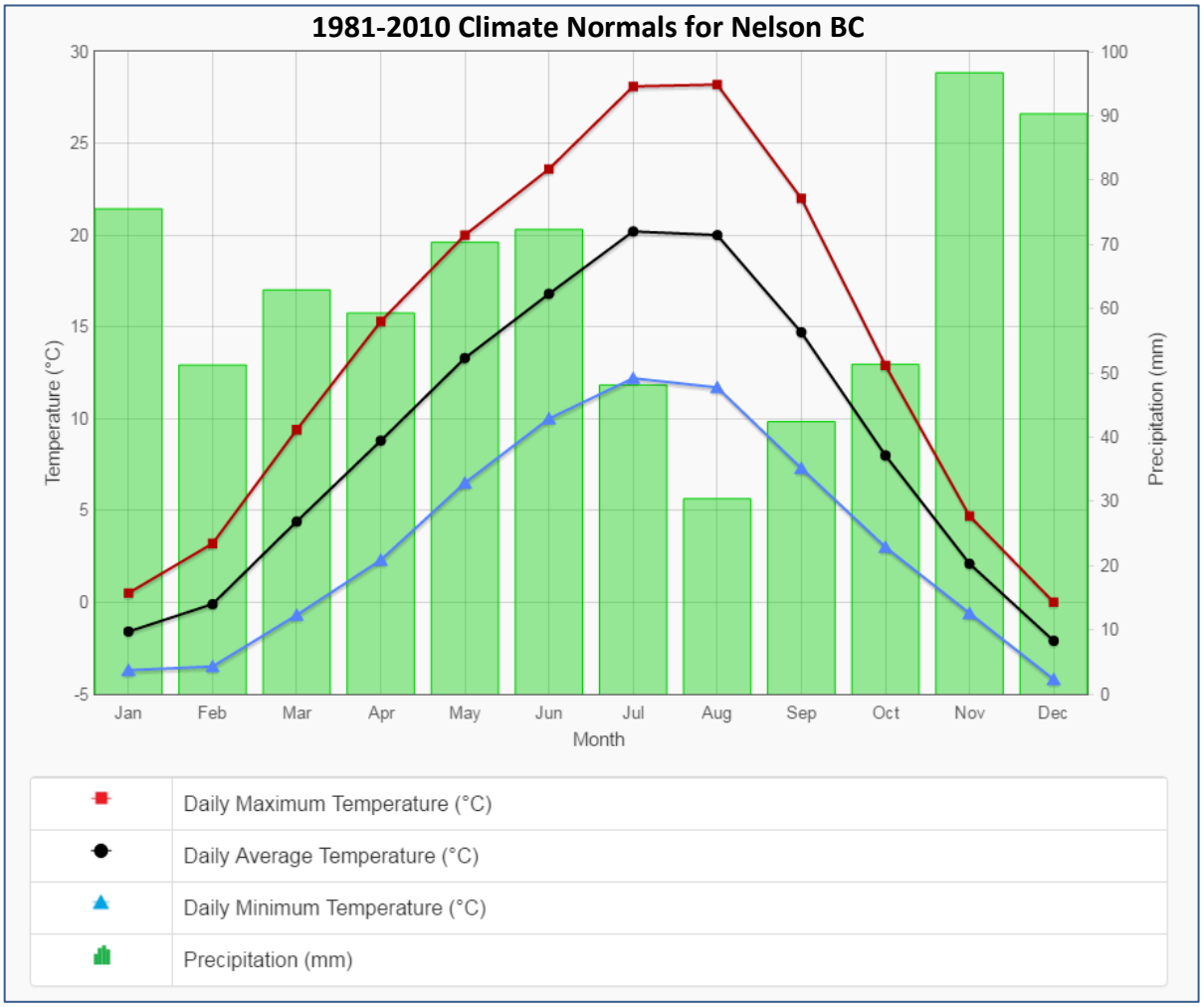

Figure 4 – Temperature and precipitation graph for 1981 to 2010 climate normals (Environment Canada, 2016)

Lawn and Garden Watering Assessments

The main focus for the 2016 Central Water Smart Ambassador was providing effective education for residents. Performing residential lawn and garden watering assessments was a great way to reach people in the community. Assessments involved working one on one with homeowners, providing invaluable information on efficient water use. The Ambassador aided residents with reducing their outdoor irrigation needs and helped them plan to get the most out of the water they were using. Soil and landscape analysis was performed for each assessment, best watering practices were determined, and items such as hose water timers, rain gauges, and lo-flow showerheads were distributed as needed. Drought tolerant lawn and alternative landscaping informational pamphlets were handed out to residents, which encouraged them to explore non-irrigated landscape options. The 2016 Water Smart Ambassador shared his extensive water-wise gardening and landscape knowledge with residents. Irrigation system scheduling and leak detection was also offered to homeowners with automatic irrigation systems. Once an assessment was completed, the homeowner was given a home report card from the Ambassador (Figures 5 & 6). The report card outlines inefficiencies spotted, remediation steps, efficient water scheduling, and drought tolerant landscape information. Some assessments required follow-ups throughout the summer. Homeowners were also reminded that the Ambassador would be patrolling regularly throughout the community.

Home Assessment Information

Recommended average maximum amount of water per month for local region:

Month	May	June	July	August	Sept-Oct
Amount in inches recommended	3	3	6	5.5	2

Based on your home assessment you should be watering:

Location at Property	Soil type	Sun Exposure	Recommended inches of watering per week
Front Flower Bed	Sandy, Dry, Clay	Moderate	10 Minutes – 2 x per Week
Front/Back Lawn	Loam, Compacted	Mixed	15 Minutes – 2x per Week
Front Shrubs	Mixed	Mixed	Hand Water as Needed
Back Garden	Mixed	Mixed	Hand Water as Needed

For more information visit: cbt.org/watersmart

Water Smart Ambassador – Chris Black – 250 505 8167

Figure 5 - Example of home assessment report card given to homeowner in Riondel

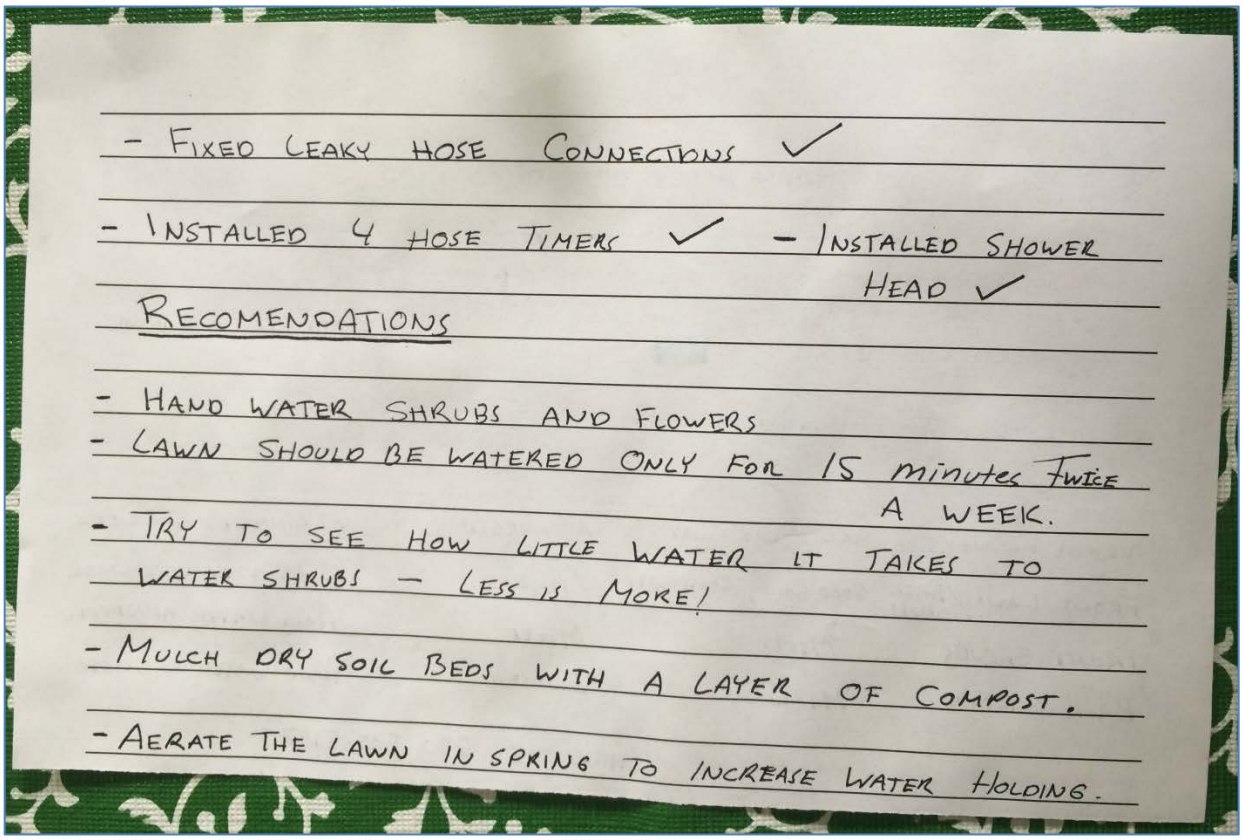

Figure 6 - Reverse side of report card given to homeowner

Total Completed Assessments

A total of 78 full watering assessments were completed throughout the nine participating communities. Including the assessments, there were a total of over 100 home visits, where residents were engaged beyond simply advertising the program. A total of 450 doors were knocked on within the nine participating communities. 2016 was the first year of the RDCK Central Water Smart Program; it could be expected that there would be increased participation if the program were run in the future (as seen in other Water Smart communities).

Assessments Booked

Since it was the first year of the Central Water Smart Program, knocking on doors was the best way to inform residents of the assessment services offered. Almost all assessments were booked this way, and many were performed during the initial visit.

Advertising for Assessments

The majority of advertising was done by knocking on the doors of residents. This was the best way to engage people and get them thinking about conserving water in a positive way. Residents were offered a free hose water timer and a chance to win a rain barrel if they chose to participate.

Posters were put up in each community providing program details. The RDCK Facebook page was utilized to share Water Smart information.

The City of Nelson provided a booth during the downtown Baker Street Market in Nelson (figure 9). The RDCK Water Smart Ambassador worked along side the City of Nelson Water Smart Ambassador for these events, where residents could sign up for assessments and learn more about conserving water. This provided a great opportunity to engage with market goers and promote efficient water use. Many of the attendees were residents of RDCK Water Smart communities. Three markets were attended.

A large banner was purchased, featuring 10 ways to conserve water (figure 8). This banner was useful during booth displays, drawing people in and sharing invaluable information. The banner features no branding other than a RDCK logo and could be utilized for future water conservation projects.

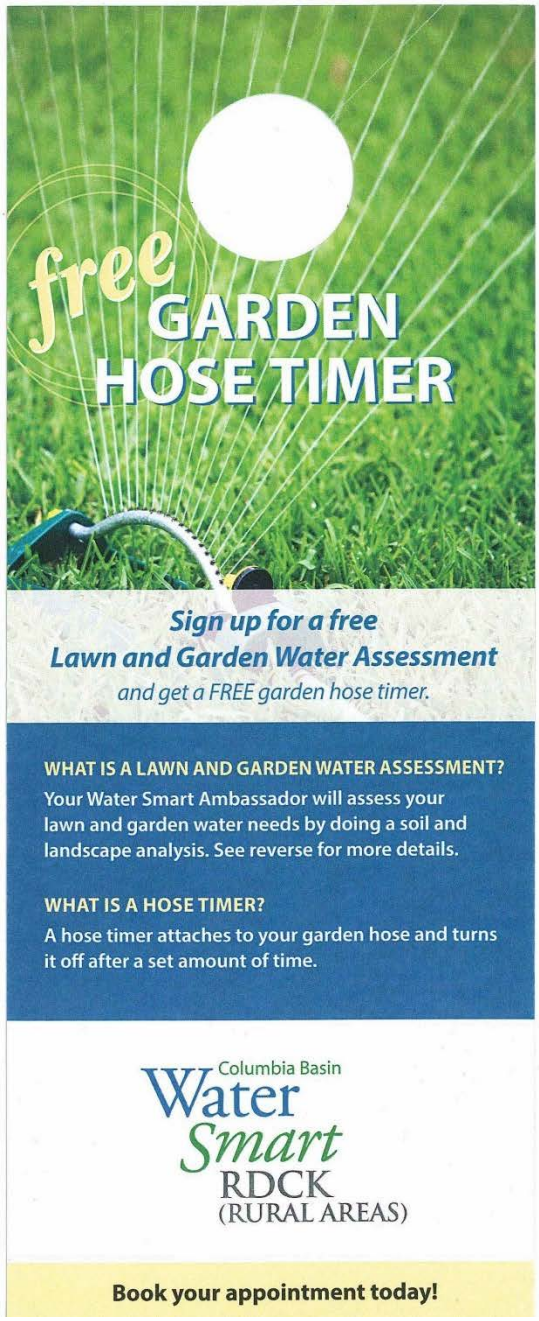

Figure 7 - Door hanger card

Figure 8 - RDCK water conservation banner

The Ambassador spread Water Smart awareness by broadcasting live radio interviews, two with Kootenay Boundary Easy Rock, and one with Kootenay Co-op Radio. The Ambassador was video interviewed at the Nelson Baker Street Market, and the results were shared online via the Nelson Star News page and RDCK Facebook page. An article outlining the Water Smart Program was printed in the Nelson Star Newspaper. Riondel news sites shared the Water Smart Ambassador contact details, and dates were advertised for each of the Ambassador visits.

An incentive program was implemented, where participating residents could enter to win prizes. Three rain barrels were supplied by Columbia Basin Trust, and one was given away each month through a raffle. A $200 grocery gift card was donated by Fortis BC, and the winner was drawn at the end of the summer. Two drip irrigation kits were also given away. Hose water timers and rain gauges were provided during every assessment. Providing incentives and free giveaways was an integral part of getting residents on board with the program.

Balfour

Twenty-two full assessments were completed for Balfour. Advertising was done by posting on community boards at the grocery store, bakery and post office. Many residents in Balfour reported having negative feelings towards the RDCK water service. This was reportedly due to a water shortage experienced in the summers of 2013 and 2014. This water shortage was caused by record high levels of demand. Some residents temporarily lost water service; while all residents were required to adhere to severe watering restrictions. Engaging with residents in a friendly and compassionate manner proved to be beneficial to overcome most communication hurdles. Public relations between the RDCK Water Smart Ambassador and these residents seemed to greatly improve throughout the summer. Residents were generally pleased with the interactions they had with the Ambassador. Observations saw Balfour soil conditions to be especially rocky, sandy, and low in organic matter – poor for lawn cultivation. Water-wise lawn care information was distributed to residents specifically to address this problem. Lawns with poor soil conditions were often overwatered, with undesirable results (see figure 15). The Ambassador worked with residents to lower the irrigation

needs of their turf, and helped them implement plans for drought resistant landscape. Some homeowners along the waterfront used irrigation water directly from the lake and were asked to compassionately follow the water restriction guidelines for the sake of not confusing other residents. More focus on drought resistant landscaping is needed in this community (see figure 14 and 15). One Balfour resident was the lucky draw winner for the Fortis $200 grocery gift card.

Woodland Heights

Six full assessments were completed for Woodland Heights. All 21 homeowners were engaged by the Ambassador and were given water restriction information magnets. Due to high instances of lawn irrigation in this community, water-wise lawn care instructions were also distributed to residents. The assessment service was especially targeted towards those who appeared to irrigate often, with repeated contact from the Ambassador throughout the summer. Initially there was no interest in the assessment service, but with repeated presence of the Ambassador, residents were willing to participate. Automatic irrigation systems have the potential to waste large amounts of water if not programmed or maintained properly. The Ambassador worked with homeowners to provide irrigation equipment education to ensure best practices were being exercised. One resident of Woodland Heights was the lucky winner of a rain barrel. The Ambassador helped install the rain barrel and provided the winner with guidelines for its use.

Duhamel

Six full assessments were completed for residents in Duhamel. This community was especially hard to get assessments in. Lawn culture is strong in Duhamel and many residents did not want input or scrutiny relating to their irrigation activities. High use of chemical fertilizers was common. These fertilizers require more water use than natural fertilizers such as compost or manure. Use of banned chemicals (City of Nelson Bylaw No. 3081, 2007) such as pesticides or herbicides was also common. Many of the residents living along the lakefront were utilizing the lake water for irrigation purposes, and it was suspected that several of these residents did not hold proper licensing to do so. Some homeowners were especially bad at following the RDCK water conservation measures (RDCK Bylaw No. 2470, 2015). It was noticed that a few residents were watering during the day on Sundays when they knew the Ambassador was not patrolling. The Ambassador would follow up with every known instance of bylaw infraction – providing support to homeowners by giving them water timers and education about the restrictions. It was clear to the Ambassador that abuses of the community water system had been occurring for a number of years, as indicated by residents of Duhamel. More public education and support should be utilized in the future to address these concerns. The ambassador provided comprehensive information on topics of drought tolerant turf landscaping and environmentally friendly lawn care practices.

Grandview

Nine full assessments were performed in Grandview. Being a relatively new subdivision, this community has large homes with manicured landscapes. Some of these landscapes require a substantial amount of water. A southern sun exposure means landscapes happen to severely dry out during the summer. Each residence in Grandview was visited by the Ambassador and water efficient landscapes were promoted. Reception of the Water Smart Program was good in this community, with many residents asking questions on how they can do their part to reduce water consumption. Pressure was put on homeowners with automatic irrigation systems to regularly update programming and be conscientious of water volumes. Three homeowners in this

community installed non-irrigated or water-wise landscapes after consulting with the Water Smart Ambassador. Two other homeowners were in the process of planting non-irrigated plants and they valued input from the Ambassador. A continued focus on high water use in Grandview is needed as more houses are constructed each year. A number of residents were unaware of the energy intensive process involved with pumping and treating the water. Providing education to homeowners was pivotal in this community. One particular residence in Grandview was using very large volumes of water on a daily basis. The homeowner was contacted three times with visits from the Ambassador, then a firm letter was sent addressing this issue. Once the letter was received, an immediate and drastic reduction in water use was noted on the homeowners' water meter.

Riondel

Seventeen full assessments were performed. The town of Riondel is a gardening community with many residential fruit orchards and gardens that require irrigation. Generally, residents were interested in learning more about water conservation. It was noted that some gardeners use water saving techniques such as surface ground water catchment, rainwater storage, and soil cover mulch. Residents of Riondel helped the Water Smart Ambassador by anonymously informing him of high water users, which were then targeted for assessments or bylaw education. Some residents did need help setting a water schedule, as they were watering far too much. Residential irrigation systems often had leaks or other inefficiencies that could easily be remedied. One property required repeated contact attempts to bring into compliance. An automatic irrigation system was turning on during the day while the owners were away. The ambassador had called the property owner a dozen times, visited the property three times, and sent a letter to the address outlining restriction measures and offering an assessment. The property manager responded to the Ambassador late in the summer and then made the appropriate changes to their irrigation schedule. Awareness of the Water Smart program grew over the summer as the Ambassador became well known in the community. The August rain barrel contest winner was Bluebell Manor, a senior's home in Riondel. The rain barrel will be used for the community garden with many active gardeners on site. The senior's center has implemented the Ambassadors watering recommendations and has also installed five low flow showerheads. The Ambassador could complete many more assessments in this community with an extended timeline for the program.

Riondel Golf Course is a nine-hole golf club that is currently using the town water supply for irrigation. The Ambassador worked with golf course staff to reduce watering inefficiencies, and information was provided on new water conserving technologies. The Ambassador performed an industry standard golf course irrigation audit, and the data was presented in a professional report to the golf course management team. During the summer months, Riondel Golf Course consumes more water than the entire residential component of Riondel (RDCK, 2016). Residents voiced a strong concern about this high usage of treated water. Residents were pleased the RDCK and Water Smart Ambassador were looking at ways to reduce golf course community water demand. There is still much work to do with the Riondel Golf course, as it is still the highest consumer of the town's water resource. There is so-far no commitment from the golf course towards implementing the water smart recommendations. A continued collaboration with the RDCK and the Riondel Golf Club is expected, and more work with the Ambassador would be beneficial. Historically, the water demand from this golf course has increased throughout the years (RDCK water meter data).

Woodbury Village

Three full assessments were performed in Woodbury. More advertising and another round of door knocking could have potentially netted more assessments in this community. Bylaw education proved to be very important, as many residents were unaware of summer watering restrictions. Some Woodbury Village homeowners utilized non-irrigated landscape plants such as drought tolerant species of native vegetation. Vegetable and flower gardens in Woodbury Village were often watered inefficiently with overhead sprinklers, and the Ambassador worked with homeowners to recommend and design water saving drip irrigation systems. At least two residents reported installing more efficient irrigation systems after the Ambassador visit. Some residents requested assistance with programming their automatic irrigation timers to lower water consumption. A number of residents were irrigating excessively and accepted irrigation schedule advice from the Ambassador. One resident of Woodbury Village was the lucky winner of a rain barrel.

West Robson

Ten full assessments were performed in West Robson. This community has a hot and dry micro-climate during the summer and a south facing sun exposure. A few residents in West Robson reported “not liking” people from the RDCK organization. This provided a great opportunity for the Ambassador to take their comments and address their concerns about the water system. Generally, people seemed pleased with the interactions they experienced with the Ambassador, even if they were asked to shut off their water. A supportive approach was utilized, where the Ambassador was offering to help residents, rather than police them. Water timers and informational handouts were given to residents who needed them, especially those who were watering during the day. Residents were happy to receive magnets with the watering restrictions printed on them; they reported that it made things easier for them. Lawn irrigation was common in West Robson. Residents who appeared to irrigate lawns often were successfully targeted to receive assessments or education. Tree watering was an issue in a few instances, and homeowners were informed on how to properly care for trees during drought conditions.

Ymir

A total of four full assessments were performed. The town of Ymir proved to be a challenging place for the Ambassador to book assessments. This was due to multiple factors. Travelling door to door in Ymir did not work well, as many residents owned dogs and had fences surrounding their properties. A public booth was set up downtown on three dates, where residents were engaged in conversations about conserving water. Many of the residents of Ymir were not interested in an assessment service; this was due to a poor understanding what the service entailed. Lo-flow showerheads were the most popular item residents were interested in. The assessment service was advertised in Ymir all summer on three community bulletin boards. The Ambassador had put up posters with tear-off contact details; many people had taken the Ambassadors phone number and email address, but did not follow through. Awareness of the Ambassador Program and assessment service was generally poor in Ymir. Increased presence of the Ambassador and more public awareness would likely increase participation in the future. More education is needed for Ymir, as many residents reported concerns of non-existent problems with the water system such as fluoridation and maintenance issues.

Lucas Road

Out of the five service connections, only one assessment was performed for Lucas Road Water System. The Ambassador distributed door knockers and engaged with residents who were available to chat. The Ambassador did another round of door knocking at the end of August, distributing water restrictions magnets to residents.

Figure 9 - RDCK and City of Nelson Water Smart Ambassadors promoting assessments at the Baker Street Market

Non-Compliance

Residents who were watering outside of the bylaw schedule (RDCK Bylaw No. 2470, 2015) were either spoken to by the Ambassador, or were left a lawn flag if not home. The lawn flag had text which directed residents to the Water Smart web page where they could learn about the current watering restrictions in place. The goal was to educate residents about being water smart. Addresses that received a lawn flag or those that had direct contact with the ambassador about the infraction were observed to be compliant from that point forward. A friendly and supportive approach was used by the ambassador, and most people responded in kind. The Ambassador would expect a large increase in non-compliance if the weather had been drier than what was experienced during the summer of 2016.

Patrolling

Patrolling occurred in each community throughout the summer. The Ambassador travelled on foot, by bike, and by electric hybrid vehicle, while looking for bylaw infractions and homeowners to target for assessments. The need for patrolling increased as the Ambassador finished door to door knocking and the summer weather became hotter and drier.

Figure 10 - Lawn Flag

Lawn flags were used on about 20 occasions, usually due to unnatended hose leaks (figures 11 and 12) or running sprinklers. The Ambassador spoke to the resident first if they were home.

Figure 11 - An unattended hose leaking over one liter per minute, encountered by the Ambassador

Figure 12 - One of the dozens of leaking faucets encountered by the Ambassador

Water Restriction Measures

Stage 1 water restrictions go into effect every year from June 1st to September 30, regardless of seasonal weather patterns. For the entire summer of 2016, the restriction measures did not exceed stage 1. This is not the norm and not representative of past years where many systems find themselves in Stage 2 or Stage 3 restrictions.

Activity	Mandatory Restrictions			
	Stage 1	Stage 2	Stage 3	Stage 4
Watering of lawns	**ONLY** between the hours 7 pm - 10 am	**ONLY** between the hours 6 am – 10 am, and 8 pm – 10 pm	Prohibited	Prohibited
Watering of new lawns (seed within 45 days and sod within 21 days of installation)	**ONLY** between the hours 7 pm - 10 am	**ONLY** between the hours 6 am – 10 am, and 8 pm – 10 pm	**ONLY** between the hours 6 am – 10 am, and 8 pm – 10 pm	Prohibited (Except where permitted by the Manager)
Watering of gardens, trees and shrubs (excluding watering of commercial agricultural products)	**ONLY** between the hours 7 pm - 10 am	**ONLY** between the hours 6 am – 10 am, and 8 pm – 10 pm	**ONLY** between the hours 6 am – 10 am, and 8 pm – 10 pm	Prohibited
	Watering using drip irrigation, a watering can, and or hand held hose, which eliminates over-spray is permitted at any time.			
Watering of Commercial Agricultural Products (production and sales)	Permitted	Permitted	Permitted	Permitted (Voluntary Conservation)
Wash down (sidewalks, walkways, driveways, exterior building surfaces, window, vehicles or other outdoor surface)	Permitted	**ONLY** between the hours 6 am – 10 am, and 8 pm – 10 pm	Prohibited (Except where critical for health and safety, and business operations)	Prohibited (Except where critical for health and safety)
Filling of fountains or other decorative features	Permitted	Prohibited (Except where permitted by the Manager)	Prohibited	Prohibited
Filling of outdoor hot tubs and/or wading pools.	Permitted	Permitted	Prohibited	Prohibited
Filling of swimming pools	**ONLY** between the hours 8 pm - 7 am	Prohibited (Except where permitted by the Manager)	Prohibited	Prohibited
Dwelling water consuming appliances such as washing machines and dishwashers	Permitted	Permitted	Permitted (Voluntary Conservation)	Permitted (Voluntary Conservation)
Large commercial water use such as laundromats, washers, carwashes, etc.	Permitted	Permitted	Permitted (Voluntary Conservation)	Permitted (Voluntary Conservation)

Future Recommendations

Continuation of RDCK Water Smart Program

The 2016 summer Water Smart Conservation Program was a huge success. This was only the beginning of the RDCK central water conservation project. Continued efforts of education, bylaw patrolling, and implementation of drought resistant landscapes would be beneficial. Many homeowners do not understand the high electrical, operational, and infrastructure costs that are inherent in providing water service to the users. The general attitude the Ambassador encountered was that water is an unlimited resource that does not need conserving. “We live next to a lake, why should we conserve water…” was a comment heard more than once this summer. Rising rates for electricity and inflated operating costs means that resources will continue to be strained in the future. British Columbian residents are amongst the biggest water users in the world (Environment and Climate Change Canada (Government of Canada), 2016). There is a lot of room for residents to reduce their water footprint, therefore getting more value from the water infrastructure they use. It is not economically viable to allow treated water to be wasted by homeowners as the infrastructure must be continually maintained and upgraded to meet their demand.

Water Smart Newsletter

The Ambassador could be utilized to create a water smart newsletter. The newsletter would contain important water system information and would outline current water conservation measures. A newsletter could promote the assessment service and advertise the incentive program. Increased awareness of water infrastructure and conservation measures is needed for all communities; this could be one potential way to do it. The newsletter could be distributed door to door, in order to better engage with residents.

Drought Tolerant Turf and Landscape Support

Estimates show that 30-60% of treated residential water is used for lawn irrigation during the summer months. Soils in the West Kootenay Region were observed to be particularly bad for cultivating turf grass – with rocky, sandy, and clay conditions noted by the Ambassador. Drought tolerant turf alternatives are available and should be heavily promoted in the region. Many drought resistant plant species thrive in poor soil conditions. Drought resistant grasses such as tall fescue and buffalo grass can be alternatives to typical thirsty grass species seen in lawns. Planting attractive micro-clover or yarrow could replace typical turf grass while requiring less fertilizer, irrigation and maintenance. Ground covers such as kinnikinnick, creeping thyme and sedum stonecrops work well for greening up dry slope areas. Informational pamphlets and possibly seeds could be distributed by the ambassador to promote drought resistant landscapes. Many municipalities in BC have implemented programs to help residents utilize drought tolerant plants – using pamphlets, demonstration gardens, and seed distribution (see end resource section for examples). Public education is important for this topic, as most homeowners are not aware of irrigation free gardening options.

Figure 13 - Micro clover demonstrating its drought tolerant characteristics amongst dried out grass

Water Smart Program Open to Public

The 2016 Central Water Smart Program was open to 9 RDCK water systems in the central Kootenay region (inclusion was based on whether or not the respective Commission of Management, Community Advisory Committee, or Director supported the initiative). Inquiries for the assessment and education service came from all over the region as the public became aware of the program. The Ambassador received dozens of inquiries from communities such as: South Slocan, Nelson North Shore through to Balfour, Krestova, Pass Creek, Blewett, Bonnington, and Crawford Bay. If the program were open to the general public, different levels of resources could be provided for each community based on regional funding. Many residents would benefit from education, but do not necessarily need incentives or free giveaways if they are on their own water system. Users on RDCK owned water systems should be encouraged to get assessments with incentives. While the Ambassador could not perform the requested assessments in non-participating water systems and communities, he did provide useful water conservation web links via email to those residents. It should be noted that there were 10 assessment requests from users of the South Slocan RDCK water system. These residents were disappointed that they were not eligible for assessments, as this area opted out of participation with the Water Smart Program.

Corrugated Plastic Water Smart Advertisement Signs

Inexpensive plastic lawn signs could be purchased to promote Water Smart community awareness. The Ambassador noted the need for increased water smart awareness in every community. These signs could be placed throughout participating communities to provide information and advertise the assessment service. They could also serve as a gentle reminder to residents about the water conservation measures in effect.

Update Water Smart Branding and Informational Pamphlets

Some of the pamphlets and web content provided by Columbia Basin Trust appear dated and do not contain fully comprehensive information. Two examples would be the CBT xeriscaping pamphlet and the indoor water saving tips pamphlet. These pamphlets only overview those topics and many residents have requested more detailed information sources. Municipal governments such as the City of Kamloops and the City of Nanaimo have created vibrant and information rich documents covering water smart topics such as drought resistant lawns, xeriscape gardening, and water conservation facts. The Water Smart Ambassador could be utilized to compile information that is comprehensive, informative and attractive to residents.

Incentives

The incentive program proved to be a crucial component of the Water Smart Program in 2016. More items to give away such as rain gauges, hose flow meters, toilet tank bags, and faucet aerators would be helpful for increasing participation. Children's toys such as shower timers and fun fact coloring sheets could help spread awareness to the younger generation.

Water Meter Reading

The Ambassador could be utilized to read and record water system data for the water utilities department. This was a goal for 2016, but training for this was unavailable due to new software implementations happening at the time.

Public Relations

The Ambassador played an important role for RDCK public relations in 2016. Working with residents one on one proved to be very valuable for educating residents about the RDCK water service and water conservation measures. An uneducated public may be sharing the wrong information amongst themselves; as noted by the Ambassador in a few instances. Having the Ambassador provide the facts in a personable and friendly way promotes the RDCK image and the services it provides. Most residents were extremely pleased with the interactions they had with the Ambassador. Continuation of the Water Smart Ambassador education campaign would be beneficial for RDCK public relations.

Automatic Irrigation System Programming

Automatic irrigation systems have the potential to waste large amounts of water while the homeowner is unaware. This was often the case throughout every participating community. Irrigation systems should be assessed yearly to check for leaks and for properly scheduled watering intervals. Many individuals do not know how to operate their controllers and do not understand the importance of updating their watering programs as the seasons shift. The general attitude about automatic irrigation is "set it and forget it". This behavior often results in wasteful watering practices. An incentive program should be implemented to entice homeowners into getting their

automatic irrigation systems checked by the Ambassador. Education for the homeowners is essential in dealing with this problem. The Ambassador had difficulty convincing homeowners to sign up for the assessment service, as the incentives offered such as rain barrels and water timers were not applicable for these residents. Repeated contact from the Ambassador did result in some homeowners getting assessments. Most automatic irrigation systems the Ambassador looked at were running inefficiently and required adjustments to be made by the homeowner.

Columbia Basin Training Feedback

The Water Smart Ambassador Training Program took place in Nelson BC over the course of four days. The training covered many water smart topics and involved two days of field work. An extension of the training timeline would be beneficial to get more hands on experience with performing assessments. More resources on the topic of xeriscape gardening would also prove beneficial for the Ambassadors.

Questions from Neal Klassen:

1. **What did you like most about the Water Smart program?** Public relations became a big part of my role and I was happy to provide invaluable water related information to homeowners. The feedback from residents was incredibly positive. I also enjoyed seeing a real transformation in the communities I was working in. As the summer progressed there was increased participation in the program and more interest for Water Smart education from the public. Working one-on-one with residents during assessments was the best part of the program.
2. **What did you learn from the program?** Working with the Regional District of Central Kootenay provided valuable work experience in a professional environment. I was able to learn more about regional government policies and operations, and explore career options relating to water and environmental services. The Water Smart program taught me valuable marketing and communication skills.
3. **What would you change about the program in your area?** Increasing the number of incentives and free giveaways would improve participation greatly. Providing detailed and in-depth information on drought resistant landscapes should be emphasized. Many municipalities are creating extremely comprehensive xeriscape planting guides and resources. I would like to see more of this from the Water Smart Program in my area. A changing climate means people's habits need to change as well – we need to prepare for a future where droughts are more common.

Water Smart Inventory

Hose Water Timers ---------- 53
Lawn Flags ---------- 950
Water Smart Banner ---------- 1
Catch Cans ---------- 8
Soil Probe ---------- 1
Rain Gauges ---------- 12
Graduated Cylinder ---------- 1
Xeriscape Pamphlets ---------- 20
Door Hangers Card ---------- 150
Low Flow Showerheads ---------- 50

Further Resources

City of Kamloops, Creating a Xeriscape - http://www.kamloops.ca/ipm/pdfs/Brochure-CreateXeriscape.pdf

Columbia Basin Trust Water Smart - http://www.cbtwatersmart.org/

Environment and Climate Change Canada (Water) - http://www.ec.gc.ca/eau-water/

Province of British Columbia (Water) - http://www2.gov.bc.ca/gov/content/environment/air-land-water/water

Province of British Columbia Drought Portal - http://www2.gov.bc.ca/gov/content/environment/air-land-water/water/drought-flooding-dikes-dams/drought-information

Province of British Columbia (Climate Change) - http://www2.gov.bc.ca/gov/content/environment/climate-change

Figure 14 – Non-irrigated xeriscape garden in Balfour

Figure 15 – Sun damaged turf grass observed being irrigated in Balfour