

High Streamflow Advisory – South Coast and Vancouver Island - ISSUED: 12:00PM November 13, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 13, 2021 at 11:53:34 AM Pacific Standard Time

High Streamflow Advisory – South Coast and Vancouver Island ISSUED: 12:00PM November 13, 2021

The River Forecast Centre is **issuing** a **High Streamflow Advisory** for:

- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**
- **Fraser Valley including the Chilliwack River and surrounding tributaries**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island, including the Englishman River**

A significant atmospheric river is expected to impact southern coastal regions of British Columbia starting today. This is forecast to bring heavy rainfall throughout Saturday night and Sunday, and ease on Monday. Environment and Climate Change Canada have rainfall warnings in place, with the heaviest rainfall expected around Howe Sound and the Fraser Valley, with upwards of 150mm total rainfall amounts expected by Monday. Lesser rainfall amounts (75-100mm) are forecast for other regions. Temperatures are expected to rise throughout the atmospheric river, with freezing levels pushing 2000 m elevation on Sunday before cooling on Monday. Additional snowmelt of recent snow accumulations at mid-elevations (1000-1500m) is expected to add to river runoff.

Rivers are expected to rise rapidly throughout Sunday in response to rainfall, and ease on Monday as the heaviest rainfall passes. Current modelling is indicating the potential for flows in the 2-year to 5-year range.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected.

Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

UPDATE - Flood Watch – Englishman River (UPGRADED) - High Streamflow Advisory – South Coast and Vancouver Island (MAINTAINED) - ISSUED: 9:00AM November 14, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 14, 2021 at 8:57:38 AM Pacific Standard Time

**Flood Watch – Englishman River (UPGRADED)
High Streamflow Advisory – South Coast and Vancouver Island
UPDATED: 9:00AM November 14, 2021**

The River Forecast Centre is **upgrading** to a **Flood Watch**:

- **Englishman River**

The River Forecast Centre is **issuing or maintaining** a **High Streamflow Advisory** for:

- **Fraser Canyon tributaries, including tributaries around Hope (NEW)**
- **Central Vancouver Island including tributaries around Port Alberni (NEW)**
- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**
- **Fraser Valley including the Chilliwack River and surrounding tributaries**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-75mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 30-50mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake; 40-115mm around Southern Vancouver Island; 20-40 mm around Eastern Vancouver Island; 80-130mm around Western Vancouver Island.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Forecasted rainfall on Sunday through Monday is expected to be in the 50-75 mm range across East and South Vancouver Island; up to 100mm across Western and Inland Vancouver Island; up to 75mm around Metro Vancouver; up to 100mm across North Shore Mountains and western Fraser Valley around Abbotsford; up to 150mm across Howe Sound and eastern Fraser Valley around Chilliwack to Hope; and up to 80mm across areas of the Fraser Canyon.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Additional rises are expected through Sunday in response to forecasted rainfall today, and ease on Monday as the heaviest rainfall passes. Current modelling is indicating the potential for flows in the 2-year to 5-year range. On the Englishman River, flows are already high and additional rainfall forecasted for today is indicating the potential for the river to reach or exceed flood stage (approximately 280 m³/s at the Water Survey of Canada gauge 08HB002 Englishman River near Parksville).

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

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UPDATE - Flood Watch – Chilliwack River (UPGRADED), Englishman River - High Streamflow Advisory – South Coast and Vancouver Island ISSUED: 11:45AM November 14, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 14, 2021 at 11:42:05 AM Pacific Standard Time

**Flood Watch – Chilliwack River (UPGRADED), Englishman River
High Streamflow Advisory – South Coast and Vancouver Island
UPDATE: 11:45AM November 14, 2021**

The River Forecast Centre is **upgrading or maintaining a Flood Watch:**

- **Chilliwack River (NEW)**
- **Englishman River**

The River Forecast Centre is **issuing or maintaining a High Streamflow Advisory for:**

- **Fraser Canyon tributaries, including tributaries around Hope**
- **Central Vancouver Island including tributaries around Port Alberni**
- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**
- **Fraser Valley including the Chilliwack River and surrounding tributaries**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-75mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 30-50mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake; 40-115mm around Southern Vancouver Island; 20-40 mm around Eastern Vancouver Island; 80-130mm around Western Vancouver Island.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Forecasted rainfall on Sunday through Monday is expected to be in the 50-75 mm range across East and South Vancouver Island; up to 100mm across Western and Inland Vancouver Island; up to 75mm around Metro Vancouver; up to 100mm across North Shore Mountains and western Fraser Valley around Abbotsford; up to 150mm across Howe Sound and eastern Fraser Valley around Chilliwack to Hope; and up to 80mm across areas of the Fraser Canyon.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Additional rises are expected through Sunday in response to forecasted rainfall today, and ease on Monday as the heaviest rainfall passes. Current modelling is indicating the potential for flows in the 2-year to 5-year range. On the Englishman River, flows are already high and additional rainfall forecasted for today is indicating the potential for the river to reach or exceed flood stage (approximately 280 m³/s at the Water Survey of Canada gauge 08HB002 Englishman River near

Parksville). Flows on the Chilliwack River above Slesse Creek (08MH103) have reached 260 m³/s (5-year flow) and are expected to continue to rise throughout Sunday.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

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A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Flood Warning – Tulameen River, Coldwater River - ISSUED: 5:30PM November 14, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 14, 2021 at 5:34:04 PM Pacific Standard Time

Flood Warning – Tulameen River, Coldwater River ISSUED: 5:30PM November 14, 2021

The River Forecast Centre is **issuing** a **Flood Warning**:

- **Tulameen River and tributaries**
- **Coldwater River**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 25-100mm range across the Coquihalla, upper Coldwater and Tulameen River watersheds, including approximately 40mm of rainfall at the Blackwall Automated Snow Weather Station.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is adding additional runoff to rivers.

Rivers have risen rapidly today. Current conditions include:

- Tulameen River at Princeton (Water Survey of Canada gauge 08NL024) is flowing at 296 m³/s (approaching a 5-year flow) and rapidly rising at 50m³/s additional flow per hour
- Tulameen River near Vuich Creek (08NL071) is flowing at 201 m³/s (between a 20-year and 50-year return period) and rising at 45 m³/s per hour
- Coldwater River near Brookmere (08LG048) is flowing at 135 m³/s (between a 20-year and 50-year flow) and rising at 25 m³/s

Additional rises are expected overnight Sunday and into Monday with additional rainfall forecasted. River levels are expected to ease later on Monday as rainfall rates ease.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

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Fwd: UPDATE – Flood Watch – Lower Nicola River (NEW) - Flood Warning – Similkameen River, Tulameen River, Coldwater River - ISSUED: 7:15AM November 15, 2021

From: O'Donoghue, Eamon G FLNR:EX <Eamon.ODonoghue@gov.bc.ca>
To: Meier, Ian R FLNR:EX <Ian.Meier@gov.bc.ca>
Sent: November 15, 2021 at 8:32:25 AM Pacific Standard Time
I presume you get these?

Eamon O'Donoghue
Associate Deputy Minister
Regional Operations

Begin forwarded message:

From: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>
Date: November 15, 2021 at 7:09:47 AM PST
To: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>
Subject: **UPDATE – Flood Watch – Lower Nicola River (NEW) - Flood Warning – Similkameen River, Tulameen River, Coldwater River - ISSUED: 7:15AM November 15, 2021**

**UPDATE – Flood Watch – Lower Nicola River (NEW)
Flood Warning – Similkameen River, Tulameen River, Coldwater River
ISSUED: 7:15AM November 15, 2021**

The River Forecast Centre is **issuing** a **Flood Watch** for:

- **Nicola River from Merritt to Spences Bridge**

The River Forecast Centre is **maintaining** a **Flood Warning** for:

- **Similkameen River**
- **Tulameen River and tributaries**
- **Coldwater River**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-185mm range across the Coquihalla, upper Coldwater and Tulameen River watersheds.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is adding additional runoff to rivers.

Rivers have risen rapidly today. Current conditions include:

- Tulameen River at Princeton (Water Survey of Canada gauge 08NL024) has a slowed rate of rise over the past hour and is currently at 4.1m on the gauge. This is beyond the flow estimate range for this station is estimated to be beyond a 50-100 year return period flow
- Tulameen River near Vuich Creek (08NL071) reached 4.35m gauge height earlier on Monday morning and has experienced a slight decrease over the past few hours. This is beyond the

flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow

- Coldwater River at Merritt (08LG010) is at 3.1m gauge height. This is beyond the flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow. Continued rises are expected through the morning on Monday
- Similkameen River at Hedley (08NL038) is flowing at 820 m³/s (approaching a 50-year flow) and rising. Additional rises are expected through the morning and potentially the afternoon on Monday
- Nicola River near Spences Bridge (08LG006) is flowing at 270 m³/s (approximately 5-year flow) and rising at approximately 30 m³/s per hour. Additional rises are expected into the afternoon or later Monday and may reach or exceed 400 m³/s (approximately an additional 50 cm of rise at the gauge).

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Fwd: Update # 12 - Flooding - Atmospheric River Event - Multiple Regions

From: Sutherland, Craig FLNR:EX <Craig.Sutherland@gov.bc.ca>
To: O'Donoghue, Eamon G FLNR:EX <Eamon.ODonoghue@gov.bc.ca>, Manwaring, Richard G FLNR:EX <Rick.G.Manwaring@gov.bc.ca>
Cc: Sheldrake, Jeff FLNR:EX <Jeff.Sheldrake@gov.bc.ca>
Sent: November 16, 2021 at 6:43:27 AM Pacific Standard Time
Attachments: image002.png, image004.png, image005.png, image003.png, image001.png

I was wondering if the Fraser River dike system was going to hold or not given the recent heavy rain event. We'll keep you posted as I hear more from our regional staff.

Craig Sutherland

Begin forwarded message:

From: "Sutherland, Craig FLNR:EX" <Craig.Sutherland@gov.bc.ca>
Date: November 16, 2021 at 6:38:19 AM PST
To: "Johnsrude, Allan N FLNR:EX" <Allan.Johnsrude@gov.bc.ca>
Cc: "Sheldrake, Jeff FLNR:EX" <Jeff.Sheldrake@gov.bc.ca>, "Tucker, Denise FLNR:EX" <Denise.Tucker@gov.bc.ca>
Subject: Fwd: Update # 12 - Flooding - Atmospheric River Event - Multiple Regions

Good morning Allan. I hope you made it home safe last night.

I was wondering if the dike system was going to hold or not through this heavy rain event. Do we have staff out helping with this situation?

Craig Sutherland

Begin forwarded message:

s.15; s.17

From: "EMBC PDM EMBC:EX"
Date: November 16, 2021 at 5:01:26 AM PST
To: "Austin, Matt FLNR:EX" <Matt.Austin@gov.bc.ca>, "Bain, Nancy TIC:EX" <Nancy.Bain@ticorp.ca>, "Baskerville, Shannon AEST:EX" <Shannon.Baskerville@gov.bc.ca>, BCCourts <Heidi.McBride@bccourts.ca>, BCP Ministry Advisors <BCPMinistryAdvisors@victoria1.gov.bc.ca>, "Bond, Allison MCF:EX" <Allison.Bond@gov.bc.ca>, "Bouchard, Louise PSSG:EX" <Louise.Bouchard@gov.bc.ca>, "Brandt, Alissa GCPE:EX" <Alissa.Brandt@gov.bc.ca>, "Brouwer, Shauna CITZ:EX" <Shauna.Brouwer@gov.bc.ca>, "Brown, Stephen R HLTH:EX" <Stephen.Brown@gov.bc.ca>, "Brown, Tom G EMBC:EX" <Tom.Brown@gov.bc.ca>, "Brownlee, Jay EMBC:EX" <Jay.Brownlee@gov.bc.ca>, "Butler, Jason AEST:EX" <Jason.Butler@gov.bc.ca>, Can Forces
s.16 "Carrelli, John I CITZ:EX" <John.Carrelli@gov.bc.ca>, "Caul, Doug D IRR:EX" <Doug.Caul@gov.bc.ca>, "Chandler, Alex EMBC:EX" <Alex.Chandler@gov.bc.ca>, "Chiddell, Dan J AG:EX" <Dan.Chiddell@gov.bc.ca>, "CITZ Corporate Planning CITZ:EX" <CorpPlan@gov.bc.ca>, "Clark, Curtis C AG:EX" <Curtis.Clark@gov.bc.ca>,"

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<Susan.Williams@gov.bc.ca>, "Yuma Morisho, Okenge MUNI:EX"

<Okenge.YumaMorisho@gov.bc.ca>

Subject: Update # 12 - Flooding - Atmospheric River Event - Multiple Regions

Update # 12

16 November, 2021 – 05:00hrs

The City of Abbotsford has issued an Evacuation Order for an area formerly under Alert in East Abbotsford (Sumas Prairie).

- The dike system has begun to overflow.
- The Order will affect a few thousand people, however the exact number is unknown at this time.
- Due to the closure of Highway 1 between Hwy 11 and No. 3 Rd, evacuees will likely have to evacuate towards Chilliwack.
- Chilliwack and Central Fraser Valley Search and Rescue have been activated to assist with evacuations.

Further updates will be provided as information becomes available.

Ryan Hetschko | Provincial Duty Manager
Emergency Management BC
Block A – Suite 200, 2261 Keating Cross Rd
Saanichton, BC CANADA V8M 2A5

Ph: 250-952-4278 Fax: 250-952-4872

24 Hour Emergency: 1-800-663-3456

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Update # 11

15 November, 2021 – 1215hrs

Central Region

- An evacuation order has been issued for the entire City of Merritt.
- Buses are being used to provide transportation for persons without personal means of transit.
- Where possible persons are being encouraged to stay with family and friends. For residents where this is not an option they are being directed to Kelowna and Kamloops.
- Residents of Merritt with odd number addresses are being directed to the Kamloops ESS Reception Centre, located at McArthur Island (1655 Island Parkway).
- Residents of Merritt with even number addresses are being directed to the Kelowna ESS Reception Centre is located at 1800 Parkinson Way.

SW Region

- The JRCC is currently supporting response for persons stranded on Highway 7 due to landslides.
- 3 Cormorants are working to assist RCMP, BCEHS, Aggasiz Fire and Canada Task Force One to evacuate stranded motorists into Aggasiz.

VIR Region

- An evacuation order has been issued for the Halalt First Nations community due to flooding and an ruptured water main.

The Provincial Emergency Coordination Centre has been stood up to support response.

Further updates will be provided as information becomes available.

Colin Mathie | Provincial Duty Manager

Update # 10

City of Merritt – Central Region

- The water treatment plant is considered unsafe for personnel and will be locked up and un-occupied.
- As a result, there will be potentially no clean water or sewage treatment with the likelihood of evacuating the entire City of 7800 people.

Further updates will be provided as information becomes available on this developing event.

Mitchell Lee | Provincial Duty Manager

Update # 9

City of Merritt – Central Region

- The City is at risk of losing their water treatment plant which would compromise the entire city utility infrastructure.
 - Public works have been reassigned from other areas to focus on saving the plant.
- Swift water team was required to assist in evacuating one homeowner due to high, rushing water.
- This event will require ESS supports - intending to send some evacuees to Kamloops.

Mitchell Lee | Provincial Duty Manager

Update # 8

15 November, 2021 – 5:24 hrs

City of Merritt – Central Region

- Declared a SOLE due to flooding.
- Evacuation Order issued for properties South of Coldwater Avenue and East of Voght Street:

Mitchell Lee | Provincial Duty Manager

Update # 7

15 November, 2021 – 3:03 hrs

Central Region

- A SOLE was declared for the Town of Princeton.

Mitchell Lee | Provincial Duty Manager

Central Region

15 November, 2021 – 2:41 hrs

Regional District of Okanagan-Similkameen

- Village of Coalmont intends to issue an Alert.
- The fire department from Coalmont is in Tulameen assisting with efforts.

Town of Princeton

- 3 Evacuation Orders issued for low-lying properties along the Tulameen River.
- Dike has breached. Estimated water level is 18 inches above dike.
- Downtown core is flooded, as well, as areas north and west of the community.
- Group lodging/comfort centres are being set up at Riverside Community Hall. Schools may be used, if out of room.
- SAR has been requested to assist with evacuations- swift water capability only.
- Boil water notice in effect.

City of Merritt

- Dike has breached while rain is still falling and water levels rising.
- Evacuating 800 to 900 residences.
- Group lodging/warming centres are being set up. Churches may be used, if out of room.

Southwest Region

Motor Vehicle Accident – Loughheed Highway (Ruby Creek, near Agassiz)

- According to news media: 6-10 people trapped within vehicles due to mudslide.
- HUSAR TF#1 expected to be fully on site around 01:45 am.

- News link: <https://www.cbc.ca/news/canada/british-columbia/agassiz-bc-mudslides-highway-closure-1.6248999>

Mitchell Lee | Provincial Duty Manager

Update # 5

15 November, 2021 – 2:14 hrs

Central Region

City of Merritt

- An Evacuation Order issued for all properties within the Coldwater River 200-year flood plain. An Alert was previously issued for the same area.

Mitchell Lee | Provincial Duty Manager

Update # 4

15 November, 2021 – 1:36 hrs

Southwest Region

Fraser Valley Regional District

- An Evacuation Order issued for 53730 Bridal Falls Road (Camperland RV Resort & Cabins).
- An Evacuation Order issued for 4 properties on Auchenway Road in EA "E".

District of Kent

- SOLE declared due to flooding.
- An Evacuation Alert for residents south of 6500 block of Rockwell Drive.

Mitchell Lee | Provincial Duty Manager

Update # 3

15 November, 2021 – 0:58 hrs

Southwest Region

Fraser Valley Regional District

- SOLE declared due to flooding and mudslides.

City of Abbotsford

- An Evacuation Alert issued for Clayburn Area: Clayburn Village and surrounding area.
- An Evacuation Alert issued for Eagle Mountain Areas: Cranberry Court, Briarwood Place, Doneagle Place.
- An Evacuation Alert issued for Ten Oaks: Mount Blanchard Court, Mount Blanchard Drive and Old Clayburn Road.
- An Evacuation Alert issued for Sumas Prairie: Westside of Whatcom Road, East of Huntington Village, Southside of Vye Road.
- An Evacuation Alert issued for Straiton Areas: Dawson Road East of Sumas Mountain Road.

DGIR 213178 - Train Derailment (2 Cars) - Mile 80 Yale - SWE

- Derailment likely due to rain.
- No dangerous goods. Dry materials.
- No injuries or waterways impacted.

- Assessing situation.

Central Region

City of Merritt

- An Evacuation Alert issued for all properties within the Coldwater River 200-year flood plain. An Evacuation Order is expected to be issued later.

Regional District of Okanagan-Similkameen

- An Evacuation Order issued for 34 addresses in EA "H" due to flooding.

Highway Closures

- Highway 1 (Agassiz – Spences Bridge).
- Highway 3 (Sunshine Valley).
- Highway 5 (Hope – Merritt).
- Highway 7 (Maple Ridge – Hope).
- Highway 11 (US border – Vye Road, Abbotsford) .

Further updates will be provided as information becomes available.

Mitchell Lee | Provincial Duty Manager

Update # 2

14 November, 2021 – 22:25 hrs

Southwest Region

- SWE PREOC is activated.
- Abbotsford, Pitt Meadows, District of Kent and City of Langley have activated their EOCs.
- **Landslide** – District of Kent. EPC will investigate tomorrow.
- **Landslide** – Abbotsford (Quadling Road). EPC will investigate tomorrow. No impacts to report at this time.
- **Rockslide** - Highway 1 (south of Spuzzum, north of Yale). No impacts to report at this time.
- **Mudslide** – Abbotsford (Glencoe Place). 1 residence on Evacuation Alert.
- **Mudslides** – Abbotsford (Eagle Mountain/Cranberry Court). Potential of Evacuation Order and SOLE being declared.
- **Mudslide** - Highway 1 (Hope to Chilliwack) closed in both directions between Annis Rd and K St for 38.4 km.
 - Road will remain closed pending geotechnical study.
- **Flooding** - Highway 11 (Abbotsford) is closed from 4th Avenue to the Sumas Border.
- **Tactical Evacuation** - 200 residents were tactically evacuated by Popkum Fire Department in Bridal Falls area.
- **Motor Vehicle Accident** – Lougheed Highway (Ruby Creek, near Agassiz).
 - Initial report of a semi-truck and two cars going over an embankment due to mudslide.
 - Agassiz Fire Department and Hope SAR assisting. HUSAR TF#1 called out.

Central Region

- **Evacuation** - Initial report of 24 properties evacuated in Tulameen.
 - Dike built by FLNRO has potential to burst under current conditions.
- Potential of an Evacuation Order/Alert being issued in Princeton.
- Both Princeton and Tulameen activated their EOCs.

Further updates will be provided as information becomes available.

Mitchell Lee | Provincial Duty Manager

Update # 1

14 November, 2021 – 20:00 hrs

- An additional 13 people were evacuated due to flooding in the Clayburn Lane area.
- The City of Langley has issued an evacuation order to a family of two, due to a landslide affecting their home.
- The City of Fernie, the Fraser Valley Regional District, and the Regional District of Okanagan-Similkameen activated their Emergency Operations Centres to monitor flooding and assist homeowners.
- Emergency Support Services continues to respond to support evacuees.
- Multiple roads around the Lower Mainland are experiencing closures and washouts. City/MOTI crews are responding as required.
- BC Hydro reports a large outage in Hope, Spuzzum, Yale, and surrounding areas caused by the weather event. The estimated time of power restoration is unknown at this time.

Further updates will be provided as information becomes available.

Paul Brandson | Provincial Duty Manager

Initial Report**14 November, 2021 17:00 hrs**

Heavy rainfall in the southwest has resulted in mudslides closing both the Trans-Canada and Coquihalla Highway near Hope.

Highway 11 is closed near the Sumas border due to flooding.

Flooding in Abbotsford has displaced people from 12 homes in the Clayburn Lane area. Emergency Support Services is responding to provide assistance.

Chilliwack, Hope, and Abbotsford have activated their Emergency Operations Centres to monitor flooding and provide assistance as necessary.

Further updates will be provided as information becomes available.

Msg to Dist List 1, SWE.

Media:

<https://www.castanet.net/news/BC/351544/Rock-slide-closes-Highway-1-through-Fraser-Canyon-Sunday>

<https://bc.ctvnews.ca/flood-watches-issued-in-fraser-valley-fraser-canyon-amid-heavy-rain-melting-snow-1.5665962>

<https://www.cbc.ca/news/canada/british-columbia/coquihalla-closure-rainstorm-1.6248785>

EMBC UPDATE - November 16, 2021 @ 07:00 hrs

From: EMBC PDM EMBC:EX^{s.15; s.17}
To: Austin, Matt FLNR:EX <Matt.Austin@gov.bc.ca>, Bain, Nancy TIC:EX <Nancy.Bain@ticorp.ca>, Baskerville, Shannon AEST:EX <Shannon.Baskerville@gov.bc.ca>, BCCourts <Heidi.McBride@BCCourts.ca>, BCP Ministry Advisors <BCPMinistryAdvisors@Victoria1.gov.bc.ca>, Bond, Allison MCF:EX <Allison.Bond@gov.bc.ca>, Bouchard, Louise PSSG:EX <Louise.Bouchard@gov.bc.ca>, Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>, Brouwer, Shauna CITZ:EX <Shauna.Brouwer@gov.bc.ca>, Brown, Stephen R HLTH:EX <Stephen.Brown@gov.bc.ca>, Brown, Tom G EMBC:EX <Tom.Brown@gov.bc.ca>, Brownlee, Jay EMBC:EX <Jay.Brownlee@gov.bc.ca>, Butler, Jason AEST:EX <Jason.Butler@gov.bc.ca>, Can Forces <ESQBWCOP@forces.gc.ca>, Carrelli, John I CITZ:EX <John.Carrelli@gov.bc.ca>, Caul, Doug D IRR:EX <Doug.Caul@gov.bc.ca>, Chandler, Alex EMBC:EX <Alex.Chandler@gov.bc.ca>, Chiddell, Dan J AG:EX <Dan.Chiddell@gov.bc.ca>, CITZ Corporate Planning CITZ:EX <CorpPlan@gov.bc.ca>, Clark, Curtis C AG:EX <Curtis.Clark@gov.bc.ca>, Dobmeier, Teresa MCF:EX <Teresa.Dobmeier@gov.bc.ca>, Douglas, Andrew PSSG:EX <Andrew.Douglas@gov.bc.ca>, ES Moc Director MUNI:EX <ESMOC.DIRECTOR@gov.bc.ca>, Farnworth, Mike PSSG:EX <Mike.Farnworth@gov.bc.ca>, Fernandes, Ruth EMBC:EX <Ruth.Fernandes@gov.bc.ca>, Field, Travis <travis.field@forces.gc.ca>, Filmer, Cam A IRR:EX <Cam.Filmer@gov.bc.ca>, Finn, Heather GCPE:EX <Heather.Finn@gov.bc.ca>, FLNR BCWS Wildfire Leadership Team <BCWS_WLT@Victoria1.gov.bc.ca>, Franklin, Janice IRR:EX <Janice.Franklin@gov.bc.ca>, Fraser, Agnes EMBC:EX <Agnes.Fraser@gov.bc.ca>, Fraser, Sarah W FLNR:EX <Sarah.Fraser@gov.bc.ca>, Fyfe, Richard J AG:EX <Richard.Fyfe@gov.bc.ca>, Galbraith, David J SDPR:EX <David.Galbraith@gov.bc.ca>, Galt, Jamie HLTH:EX <Jamie.Galt@gov.bc.ca>, Godfrey, Samuel PSSG:EX <Samuel.Godfrey@gov.bc.ca>, Grant, Nick TACS:EX <Nick.Grant@gov.bc.ca>, Halls, Lori D FLNR:EX <Lori.D.Halls@gov.bc.ca>, Hewitt, Jeremy ENV:EX <Jeremy.Hewitt@gov.bc.ca>, Howlett, Tim GCPE:EX <Tim.Howlett@gov.bc.ca>, Hughes, Trevor LBR:EX <Trevor.Hughes@gov.bc.ca>, Hykaway, Mike R FLNR:EX <Mike.Hykaway@gov.bc.ca>, Jardine, Kevin ENV:EX <Kevin.Jardine@gov.bc.ca>, Kennah, Morgan FLNR:EX <Morgan.Kennah@gov.bc.ca>, Kot, Jill PREM:EX <Jill.Kot@gov.bc.ca>, Kristianson, Eric PREM:EX <Eric.Kristianson@gov.bc.ca>, XT:Van Leeuwen, Lauren JAG:IN <LVanLeeuwen@provincialcourt.bc.ca>, Liesch, Nancy FLNR:EX <Nancy.Liesch@gov.bc.ca>, Luchkow, Ray FLNR:EX <Ray.Luchkow@gov.bc.ca>, MacDonald, Scott D EDUC:EX <D.Scott.MacDonald@gov.bc.ca>, Maher, Melissa PSSG:EX <Melissa.Maher@gov.bc.ca>, Maley, Madeline L EMBC:EX <Madeline.Maley@gov.bc.ca>, Manwaring, Richard G FLNR:EX <Rick.G.Manwaring@gov.bc.ca>, McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>, Mclean, Keegan CITZ:EX <Keegan.McLean@gov.bc.ca>, LDB Safety Advisor LDB:EX <safety.advisor@bcladb.com>, Mihlar, Fazil EMLI:EX <Fazil.Mihlar@gov.bc.ca>, Miska, Ed TRAN:EX <Ed.Miska@gov.bc.ca>, Mounteney, Renee FIN:EX <Renee.Mounteney@gov.bc.ca>, Nash, Laurel ENV:EX <Laurel.Nash@gov.bc.ca>, O'Donoghue, Eamon G FLNR:EX <Eamon.ODonoghue@gov.bc.ca>, Olsson, Liz V FLNR:EX <Liz.Olsson@gov.bc.ca>, Patterson, Sarah MCF:EX <Sarah.Patterson@gov.bc.ca>, Peterson, Dave EMBC:EX <Dave.Peterson@gov.bc.ca>, Plecas, Bobbi JERI:EX <Bobbi.Plecas@gov.bc.ca>, Poss, Angie FLNR:EX <Angie.Poss@gov.bc.ca>, Prendergast, Peter L TRAN:EX <Peter.Prendergast@gov.bc.ca>, HLTH MOC Duty Officer HLTH:EX <hlth.dutyofficer@gov.bc.ca>, Ralfs, Brendan R EMBC:EX <Brendan.Ralfs@gov.bc.ca>, Rasmussen, Paul FLNR:EX <Paul.Rasmussen@gov.bc.ca>, Richards, Tara R EMBC:EX <Tara.Richards@gov.bc.ca>, Richter, Kevin J TRAN:EX <Kevin.Richter@gov.bc.ca>, Robb, Katie TRAN:EX <Katie.Robb@gov.bc.ca>, Rothe, Karen J EMBC:EX <Karen.Rothe@gov.bc.ca>, Russell, Jonathan CITZ:EX <Jonathan.Russell@gov.bc.ca>, XT:Mahar, Ryan AG:IN <rmahar@provincialcourt.bc.ca>, Sanderson, Melanie EDUC:EX <Melanie.Sanderson@gov.bc.ca>, Sedun, Jeanne AEST:EX <Jeanne.Sedun@gov.bc.ca>, Sieben, Mark PSSG:EX <Mark.Sieben@gov.bc.ca>, Stonnell, Jennifer EMBC:EX <Jennifer.Stonnell@gov.bc.ca>, Strain, Melissa AG:EX <Melissa.Strain@gov.bc.ca>, Sutherland, Craig FLNR:EX <Craig.Sutherland@gov.bc.ca>, Tanaka, Sandra AEST:EX <sandra.tanaka@gov.bc.ca>, Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>, Walker, Jennifer IRR:EX <Jennifer.7.Walker@gov.bc.ca>, Wanamaker, Lori PREM:EX <Lori.Wanamaker@gov.bc.ca>, Williams, Susan GCPE:EX <Susan.Williams@gov.bc.ca>.

Sent: Yuma Morisho, Okenge MUNI:EX <Okenge.YumaMorisho@gov.bc.ca>
November 16, 2021 at 7:00:05 AM Pacific Standard Time
Attachments: image008.png, image004.png, image006.png, image007.png, image002.png
Good morning,

EMBC UPDATE – November 16, 2021 @ 07:00 hrs

OVERVIEW

Atmospheric River Events– Multiple Regions

This weekend's atmospheric river caused heavy rain and localized flooding. Multiple rain-induced incidents occurred across Vancouver Island and the Southern half of the province in the past 24hrs. Several States of Local Emergency and Evacuation Alerts and Orders have been declared. EMBC has approved Disaster Financial Assistance for flooding in the Vancouver Island & Central Coast, Southwest, and Central regions of the province, including all First Nations communities, electoral areas, and municipalities within these areas.

Provincial Overview

- The Provincial Emergency Coordination Center will be stood up again today to support response.
- The storm blocked, damaged, and impacted multiple roadways, causing widespread road closures, and stranding multiple motorists yesterday.
 - Search and Rescue, Canada Task Force 1, 442 Squadron, and local first responders have reportedly rescued all stranded motorists and brought them to shelter and appropriate supports in nearby communities.
- BC Hydro reported widespread outages yesterday, and crews worked through the night to restore power.
- The situation is dynamic and full, accurate situational awareness remains challenging, but current estimates suggest that provincially there are over 524 properties on Evacuation Order, 315 properties on Evacuation Alert and then an additional 7,800 people on Evacuation Order in the City of Merritt because of the storm.
 - The City of Merritt has been evacuated in its entirety due to flooding and ensuing unsafe drinking water from the failure of their water treatment plant.
- Emergency Support Services volunteers are responding in affected areas to provide supports to evacuees.
 - Approximately 20 locations are activated as Reception Centers.
- Multiple highways remain closed throughout BC causing disruptions to travel.
 - Highway 1 (Malahat)
 - Highway 1 (Agassiz – Spences Bridge)
 - Highway 3 (Sunshine Valley)
 - Highway 5 (Hope – Merritt)
 - Highway 7 (Maple Ridge – Hope)
 - Highway 11 (US border – Vye Road, Abbotsford)
 - For a complete list of highway and road closures, including ferry disruptions due to flooding, see [DriveBC](#).

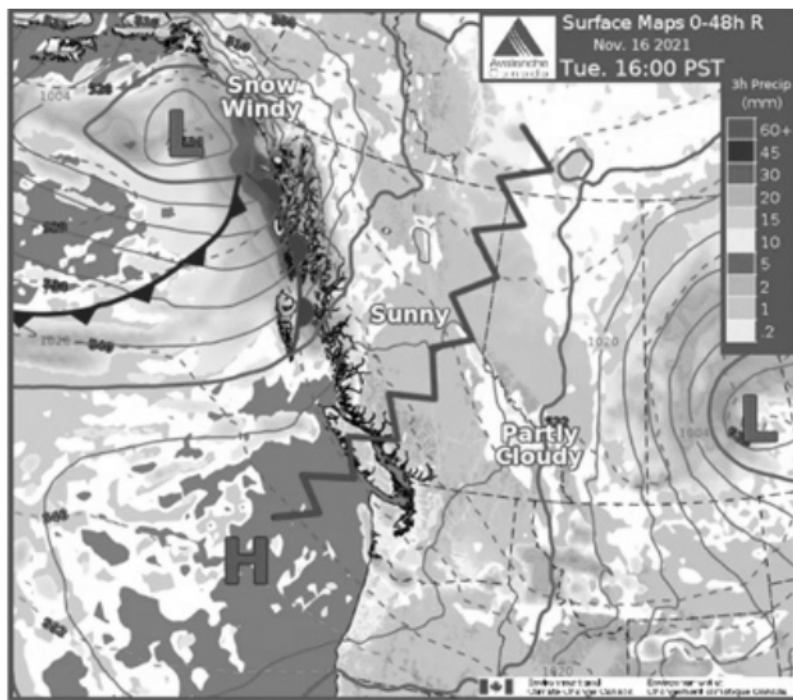
Aircraft Crash – SWE

- An aircraft of unknown size and type was reported to have crashed near Needle Peak, outside of Hope.
- Details continue to be limited due to the location of the crash and the ongoing weather event.
- The Joint Rescue Coordination Center leads the response efforts and are expected to access the crash site at first light.
- Avalanche and other safety concerns are present at the site.

DGIR Code 2/Overboard Shipping Containers – VIC

- The situation on board the M/V *Zim Kingston* remains stable, the final destination and available moorage is still being determined.
- Shoreline clean-up efforts continue as weather and tides allow. Crews are working on readying debris to be removed from the sites when conditions are favourable.

PROVINCIAL WEATHER



This morning, a ridge of high pressure builds over the interior, heralding cold and dry conditions. The true arctic air will not progress beyond the Peace and the North Rockies where light snow will end early. Elsewhere, the moderately cold, clear night will be followed by a cool, sunny day.

This afternoon, BC will be sunny and cool under the high-pressure ridge. Some clouds will linger over the Rockies. The Northwest mountain range will see increasing cloud and precipitation ahead of an advancing warm front.

WEATHER ALERTS and ADVISORIES



Winter Storm Warning in effect for: Haines Road – Haines Junction to Pleasant Camp, and South Klondike Highway - Carcross to White Pass.

Snowfall Warning in effect for: Coquihalla Highway - Hope to Merritt, and North Coast – inland sections.

FLOOD WARNINGS and ADVISORIES

Copyright

Flood Warning in effect for: Chemainus River, Englishman River, Nicola River from Merritt to Spences Bridge, Cowichan River, Koksilah River, Coquihalla River, Tulameen River including tributaries and Coldwater River.

Flood Watch in effect for: South Vancouver Island, Fraser Valley including surrounding tributaries, Fraser Canyon tributaries including tributaries around Hope and the Chilliwack River.

High Streamflow Advisory in effect for: Central Vancouver Island including tributaries around Port Alberni, Howe Sound, Sunshine Coast, Sea-to-Sky, North Shore Mountains, Metro Vancouver, West Vancouver Island, and East Vancouver Island.

PROVINCIAL SUMMARY – All Hazards

PECC Level 2	CTL	NEA	NWE	SEA	SWE	VIC	Total
PREOC Activations	1	-	-	-	1	1(+1)	3(+2)
Band Council Resolutions	13(+1)	1	1	-	-	-	15(+1)
States of Local Emergency	8(+5)	5	1	3(+1)	7(+4)	2(+2)	26(+12)
Evacuation Orders	15(+8)	7	1	3(+3)	9(+6)	6(+6)	41(+23)
Evacuation Alerts	6(+3)	7	1	1(+1)	7(+1)	-	22(+5)

REGIONAL SUMMARIES

CENTRAL REGION

City of Merritt

- SOLE declared due to flooding.
- An evacuation order issued for the City of Merritt in its entirety.

Regional District of Okanagan-Similkameen

- SOLE declared for EAs H and G due to flooding.
- An Evacuation Order issued for 74 addresses in EA “G, B, and H” due to flooding.

Town of Princeton

- SOLE declared due to flooding.
- 3 Evacuation Orders issued for 228 properties along the Tulameen River.
- 2 Evacuation Alerts for 209 properties.

Village of Keremeos

- An Evacuation Alert for the entire Village of Keremeos.

Cook’s Ferry Indian Band

- BCR declared due to flooding.
- An Evacuation Order issued for IR 1 & 4.
- An Evacuation Alert issued for the remainder of the community.

Nooaitch Indian Band

- An Evacuation Order issued for IR 10.

Thompson-Nicola Regional District

- SOLE declared for EA N due to flooding.
- An Evacuation Alert issued for EAs “I, M, and N.”
- An Evacuation Order issued for 53 properties.

NORTHEAST REGION

No significant incidents to report.

NORTHWEST REGION

No significant incidents to report.

SOUTHEAST REGION**Regional District of East Kootenay**

- SOLE declared for EA “A” due to flooding.
- An Evacuation Alert issued for 11 properties in EA “A”.

SOUTHWEST REGION

SWE PREOC is activated in response to rain-induced incidents.

Fraser Valley Regional District

- SOLE declared due to flooding and mudslides.
- An Evacuation Order issued for 53730 Bridal Falls Road (Camperland RV Resort & Cabins).
- An Evacuation Order issued for 4 properties on Auchenway Road in EA “E”.

City of Abbotsford

- An Evacuation Alert issued for Clayburn Area: Clayburn Village and surrounding area.
- An Evacuation Alert issued for Eagle Mountain Areas: Cranberry Court, Briarwood Place, Doneagle Place.
- An Evacuation Alert issued for Ten Oaks: Mount Blanchard Court, Mount Blanchard Drive and Old Clayburn Road.
- An Evacuation Alert issued for Sumas Prairie: Westside of Whatcom Road, East of Huntington Village, Southside of Vye Road.
- An Evacuation Alert issued for Straiton Areas: Dawson Road East of Sumas Mountain Road, Southern rail line to the West, Whatcom Road to the East, Highway 1 to the North, United States border to the South.
- An Evacuation Alert issued for Matsqui Village.
- An Evacuation Order issued for a portion of the Sumas Prairie.
- An Evacuation Order issued for 7 addresses on Straiton Road.

District of Kent

- SOLE declared due to flooding.
- An Evacuation Order for 59 residents south of 6500 block of Rockwell Drive.

Squamish-Lillooet Regional District

- An Evacuation Alert issued for 34 properties in EA “D”.

Village of Harrison Hot Springs

- SOLE declared due to flooding.

City of Langley

- An Evacuation Order for 1 property on 264th Street.

VANCOUVER ISLAND and CENTRAL COAST REGION

The VIC PREOC is providing support through the Regional Duty Manager and Liaison Officer as required, for the DGIR Code 2 - M/V *Zim Kingston* fire and overboard shipping containers.

Cowichan Valley Regional District

- SOLE declared for the entirety of the Regional District including the City of Duncan and local First Nations communities.
- An Evacuation Order for 6 properties in the Allenby Road area.
- Evacuation of the Meadow Glen apartment building due to flooding on Canada Ave.

Regional District of Nanaimo

- SOLE declared for EAs “A & G”.
- An Evacuation Order issued for the Cedar Grove campsite.
- An Evacuation Order for an RV site on Martindale Road.

- An Evacuation Order for 29 addresses in the Riverside Road area.

Janet Adams | Provincial Duty Manager

Emergency Management BC

Block A – Suite 200, 2261 Keating Cross Rd

Saanichton, BC CANADA V8M 2A5

Ph: 250-952-4278 Fax: 250-952-4872

24 Hour Emergency: 1-800-663-3456

Follow PreparedBC





High Streamflow Advisory – South Coast and Vancouver Island - ISSUED: 12:00PM November 13, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 13, 2021 11:53:34 AM PST

High Streamflow Advisory – South Coast and Vancouver Island ISSUED: 12:00PM November 13, 2021

The River Forecast Centre is **issuing** a **High Streamflow Advisory** for:

- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**
- **Fraser Valley including the Chilliwack River and surrounding tributaries**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island, including the Englishman River**

A significant atmospheric river is expected to impact southern coastal regions of British Columbia starting today. This is forecast to bring heavy rainfall throughout Saturday night and Sunday, and ease on Monday. Environment and Climate Change Canada have rainfall warnings in place, with the heaviest rainfall expected around Howe Sound and the Fraser Valley, with upwards of 150mm total rainfall amounts expected by Monday. Lesser rainfall amounts (75-100mm) are forecast for other regions. Temperatures are expected to rise throughout the atmospheric river, with freezing levels pushing 2000 m elevation on Sunday before cooling on Monday. Additional snowmelt of recent snow accumulations at mid-elevations (1000-1500m) is expected to add to river runoff.

Rivers are expected to rise rapidly throughout Sunday in response to rainfall, and ease on Monday as the heaviest rainfall passes. Current modelling is indicating the potential for flows in the 2-year to 5-year range.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected.

Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

UPDATE - Flood Watch – Englishman River (UPGRADED) - High Streamflow Advisory – South Coast and Vancouver Island (MAINTAINED) - ISSUED: 9:00AM November 14, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 14, 2021 8:57:38 AM PST

**Flood Watch – Englishman River (UPGRADED)
High Streamflow Advisory – South Coast and Vancouver Island
UPDATED: 9:00AM November 14, 2021**

The River Forecast Centre is **upgrading** to a **Flood Watch**:

- **Englishman River**

The River Forecast Centre is **issuing or maintaining** a **High Streamflow Advisory** for:

- **Fraser Canyon tributaries, including tributaries around Hope (NEW)**
- **Central Vancouver Island including tributaries around Port Alberni (NEW)**
- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**
- **Fraser Valley including the Chilliwack River and surrounding tributaries**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-75mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 30-50mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake; 40-115mm around Southern Vancouver Island; 20-40 mm around Eastern Vancouver Island; 80-130mm around Western Vancouver Island.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Forecasted rainfall on Sunday through Monday is expected to be in the 50-75 mm range across East and South Vancouver Island; up to 100mm across Western and Inland Vancouver Island; up to 75mm around Metro Vancouver; up to 100mm across North Shore Mountains and western Fraser Valley around Abbotsford; up to 150mm across Howe Sound and eastern Fraser Valley around Chilliwack to Hope; and up to 80mm across areas of the Fraser Canyon.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Additional rises are expected through Sunday in response to forecasted rainfall today, and ease on Monday as the heaviest rainfall passes. Current modelling is indicating the potential for flows in the 2-year to 5-year range. On the Englishman River, flows are already high and additional rainfall forecasted for today is indicating the potential for the river to reach or exceed flood stage (approximately 280 m³/s at the Water Survey of Canada gauge 08HB002 Englishman River near Parksville).

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

UPDATE - Flood Watch – Chilliwack River (UPGRADED), Englishman River - High Streamflow Advisory – South Coast and Vancouver Island ISSUED: 11:45AM November 14, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 14, 2021 11:42:05 AM PST

**Flood Watch – Chilliwack River (UPGRADED), Englishman River
High Streamflow Advisory – South Coast and Vancouver Island
UPDATE: 11:45AM November 14, 2021**

The River Forecast Centre is **upgrading or maintaining a Flood Watch:**

- **Chilliwack River (NEW)**
- **Englishman River**

The River Forecast Centre is **issuing or maintaining a High Streamflow Advisory** for:

- **Fraser Canyon tributaries, including tributaries around Hope**
- **Central Vancouver Island including tributaries around Port Alberni**
- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**
- **Fraser Valley including the Chilliwack River and surrounding tributaries**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-75mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 30-50mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake; 40-115mm around Southern Vancouver Island; 20-40 mm around Eastern Vancouver Island; 80-130mm around Western Vancouver Island.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Forecasted rainfall on Sunday through Monday is expected to be in the 50-75 mm range across East and South Vancouver Island; up to 100mm across Western and Inland Vancouver Island; up to 75mm around Metro Vancouver; up to 100mm across North Shore Mountains and western Fraser Valley around Abbotsford; up to 150mm across Howe Sound and eastern Fraser Valley around Chilliwack to Hope; and up to 80mm across areas of the Fraser Canyon.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Additional rises are expected through Sunday in response to forecasted rainfall today, and ease on Monday as the heaviest rainfall passes. Current modelling is indicating the potential for flows in the 2-year to 5-year range. On the Englishman River, flows are already high and additional rainfall forecasted for today is indicating the potential for the river to reach or exceed flood stage (approximately 280 m³/s at the Water Survey of Canada gauge 08HB002 Englishman River near

Parksville). Flows on the Chilliwack River above Slesse Creek (08MH103) have reached 260 m³/s (5-year flow) and are expected to continue to rise throughout Sunday.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected.

Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

UPDATE - Flood Watch – Fraser Valley (NEW), Fraser Canyon (NEW), Chilliwack River, Englishman River; High Streamflow Advisory – South Coast and Vancouver Island ISSUED: 3:00PM November 14, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 14, 2021 2:56:17 PM PST

**Flood Watch – Fraser Valley (NEW), Fraser Canyon (NEW), Chilliwack River, Englishman River
High Streamflow Advisory – South Coast and Vancouver Island
UPDATE: 3:00PM November 14, 2021**

The River Forecast Centre is **upgrading or maintaining a Flood Watch:**

- **Fraser Valley including surrounding tributaries (NEW)**
- **Fraser Canyon tributaries, including tributaries around Hope (NEW)**
- **Chilliwack River**
- **Englishman River**

The River Forecast Centre is **maintaining a High Streamflow Advisory for:**

- **Central Vancouver Island including tributaries around Port Alberni**
- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-100mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 45-85mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake; 60-140mm around Southern Vancouver Island; 30-60 mm around Eastern Vancouver Island; 100-145mm around Western Vancouver Island.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Forecasted rainfall on Sunday through Monday is expected to be in the 50-75 mm range across East and South Vancouver Island; up to 100mm across Western and Inland Vancouver Island; up to 75mm around Metro Vancouver; up to 100mm across North Shore Mountains and western Fraser Valley around Abbotsford; up to 150mm across Howe Sound and eastern Fraser Valley around Chilliwack to Hope; and up to 80mm across areas of the Fraser Canyon.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Additional rises are expected through Sunday in response to forecasted rainfall today, and ease on Monday as the heaviest rainfall passes. Current modelling is indicating the potential for flows in the 2-year to 5-year range. On the Englishman River, flows are already high and additional rainfall forecasted for today is indicating the potential for the river to reach or exceed flood stage (approximately 280 m³/s at the Water Survey of Canada gauge 08HB002 Englishman River near Parksville). Flows on the Chilliwack River above Slesse Creek (08MH103) have reached 260 m³/s (5-year flow) and are expected to continue to rise overnight Sunday.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Flood Warning – Tulameen River, Coldwater River - ISSUED: 5:30PM November 14, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 14, 2021 5:34:04 PM PST

Flood Warning – Tulameen River, Coldwater River ISSUED: 5:30PM November 14, 2021

The River Forecast Centre is **issuing** a **Flood Warning**:

- **Tulameen River and tributaries**
- **Coldwater River**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 25-100mm range across the Coquihalla, upper Coldwater and Tulameen River watersheds, including approximately 40mm of rainfall at the Blackwall Automated Snow Weather Station.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is adding additional runoff to rivers.

Rivers have risen rapidly today. Current conditions include:

- Tulameen River at Princeton (Water Survey of Canada gauge 08NL024) is flowing at 296 m³/s (approaching a 5-year flow) and rapidly rising at 50m³/s additional flow per hour
- Tulameen River near Vuich Creek (08NL071) is flowing at 201 m³/s (between a 20-year and 50-year return period) and rising at 45 m³/s per hour
- Coldwater River near Brookmere (08LG048) is flowing at 135 m³/s (between a 20-year and 50-year flow) and rising at 25 m³/s

Additional rises are expected overnight Sunday and into Monday with additional rainfall forecasted. River levels are expected to ease later on Monday as rainfall rates ease.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

UPDATE - Flood Warning – Coquihalla River (UPGRADED) - Flood Watch – Fraser Valley, Fraser Canyon, Chilliwack River, Englishman River - High Streamflow Advisory – South Coast and Vancouver Island UPDATE: 6:00PM November 14, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 14, 2021 5:57:31 PM PST

**Flood Warning – Coquihalla River (UPGRADED)
Flood Watch – Fraser Valley, Fraser Canyon, Chilliwack River, Englishman River
High Streamflow Advisory – South Coast and Vancouver Island
UPDATE: 6:00PM November 14, 2021**

The River Forecast Centre is **upgrading to a Flood Warning** for:

- **Coquihalla River**

The River Forecast Centre is **maintaining a Flood Watch** for:

- **Fraser Valley including surrounding tributaries**
- **Fraser Canyon tributaries, including tributaries around Hope**
- **Chilliwack River**
- **Englishman River**

The River Forecast Centre is **maintaining a High Streamflow Advisory** for:

- **Central Vancouver Island including tributaries around Port Alberni**
- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 70-120mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 45-100mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake; 70-155mm around Southern Vancouver Island; 45-70 mm around Eastern Vancouver Island; 110-155mm around Western Vancouver Island.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Additional heavy rainfall is expected throughout the region overnight, and is expected to taper off around Monday afternoon.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Additional rises are expected overnight and potentially into mid-to-late day Monday. Current modelling is indicating the potential for flows in the 2-year to 5-year range through most of the region, with locally higher amounts. On the Englishman River, flows are already high and additional rainfall forecasted for today is indicating the potential for the river to reach or exceed flood stage (approximately 280 m³/s at the Water Survey of Canada gauge 08HB002 Englishman River near

Parksville). Flows on the Chilliwack River above Slesse Creek (08MH103) have reached 290 m³/s (between a 5-year and 10-year flow) and are expected to continue to rise overnight Sunday. Coquihalla River above Alexandra Creek (08MF068) is flowing at approximately 520 m³/s (10-year flow) and rising.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected.

Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Flood Warning – Cowichan River, Koksilah River (UPGRADED) - Flood Watch – Southern Vancouver Island (UPGRADED) Englishman River - High Streamflow Advisory – West, Central, East Vancouver Island UPDATE: 4:30AM November 15, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 15, 2021 4:36:33 AM PST

**Flood Warning – Cowichan River, Koksilah River (UPGRADED)
Flood Watch – Southern Vancouver Island (UPGRADED) Englishman River
High Streamflow Advisory – West Vancouver Island, East Vancouver Island, Central Vancouver Island
UPDATE: 4:30AM November 15, 2021**

The River Forecast Centre is **upgrading to a Flood Warning** for:

- **Cowichan River**
- **Koksilah River**

The River Forecast Centre is **upgrading or maintaining a Flood Watch** for:

- **South Vancouver Island (other tributaries) (NEW)**
- **Englishman River**

The River Forecast Centre is **maintaining a High Streamflow Advisory** for:

- **Central Vancouver Island including tributaries around Port Alberni**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since Saturday have been in the 120-270mm range across Southern Vancouver Island and 60-175mm across Western, Central and Eastern Vancouver Island.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Additional heavy rainfall is expected throughout the region overnight and is expected to taper off around Monday afternoon.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Current conditions include:

- Englishman River near Parksville (Water Survey of Canada gauge 08HB002) is flowing at 174 m³/s and rising. Peak flows later today may reach up to 280 m³/s
- Cowichan River near Duncan (08HA011) is flowing at 510 m³/s (approaching a 20-year return period flow) and rising at 30 m³/s. Additional rises are expected through the day on Monday
- Koksilah River at Cowichan Station (08HA003) is currently flowing at 335 m³/s (approaching a 20-year flow). Additional rises are expected through Monday morning

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected.

Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

UPDATE - Flood Warning – Similkameen River (NEW), Tulameen River, Coldwater River - ISSUED: 5:00PM November 15, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 15, 2021 5:01:21 AM PST

UPDATE - Flood Warning – Similkameen River (NEW), Tulameen River, Coldwater River ISSUED: 5:00PM November 15, 2021

The River Forecast Centre is **issuing or maintaining** a **Flood Warning** for:

- **Similkameen River (NEW)**
- **Tulameen River and tributaries**
- **Coldwater River**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-185mm range across the Coquihalla, upper Coldwater and Tulameen River watersheds.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is adding additional runoff to rivers.

Rivers have risen rapidly today. Current conditions include:

- Tulameen River at Princeton (Water Survey of Canada gauge 08NL024) has a slowed rate of rise over the past hour and is currently at 4.1m on the gauge. This is beyond the flow estimate range for this station is estimated to be beyond a 50-100 year return period flow
- Tulameen River near Vuich Creek (08NL071) reached 4.35m gauge height earlier on Monday morning and has experienced a slight decrease over the past few hours. This is beyond the flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow
- Coldwater River at Merritt (08LG010) is at 3.1m gauge height. This is beyond the flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow. Continued rises are expected through the morning on Monday
- Similkameen River at Hedley (08NL038) is flowing at 820 m³/s (approaching a 50-year flow) and rising. Additional rises are expected through the morning and potentially the afternoon on Monday

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

****CORRECTION TO TIME** - UPDATE - Flood Warning – Similkameen River (NEW), Tulameen River, Coldwater River - ISSUED: 5:00AM November 15, 2021**

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 15, 2021 5:10:53 AM PST

**UPDATE - Flood Warning – Similkameen River (NEW), Tulameen River, Coldwater River
ISSUED: 5:00AM November 15, 2021**

The River Forecast Centre is **issuing or maintaining** a **Flood Warning** for:

- **Similkameen River (NEW)**
- **Tulameen River and tributaries**
- **Coldwater River**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-185mm range across the Coquihalla, upper Coldwater and Tulameen River watersheds.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is adding additional runoff to rivers.

Rivers have risen rapidly today. Current conditions include:

- Tulameen River at Princeton (Water Survey of Canada gauge 08NL024) has a slowed rate of rise over the past hour and is currently at 4.1m on the gauge. This is beyond the flow estimate range for this station is estimated to be beyond a 50-100 year return period flow
- Tulameen River near Vuich Creek (08NL071) reached 4.35m gauge height earlier on Monday morning and has experienced a slight decrease over the past few hours. This is beyond the flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow
- Coldwater River at Merritt (08LG010) is at 3.1m gauge height. This is beyond the flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow. Continued rises are expected through the morning on Monday
- Similkameen River at Hedley (08NL038) is flowing at 820 m3/s (approaching a 50-year flow) and rising. Additional rises are expected through the morning and potentially the afternoon on Monday

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

UPDATE - Flood Warning – Coquihalla River - Flood Watch – Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast ISSUED: 5:45AM November 15, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 15, 2021 5:44:56 AM PST

**Flood Warning – Coquihalla River
Flood Watch – Fraser Valley, Fraser Canyon, Chilliwack River
High Streamflow Advisory – South Coast
UPDATE: 5:45AM November 15, 2021**

The River Forecast Centre is **maintaining a Flood Warning** for:

- **Coquihalla River**

The River Forecast Centre is **maintaining a Flood Watch** for:

- **Fraser Valley including surrounding tributaries**
- **Fraser Canyon tributaries, including tributaries around Hope**
- **Chilliwack River**

The River Forecast Centre is **maintaining a High Streamflow Advisory** for:

- **Howe Sound**
- **Sunshine Coast**
- **Sea-to-Sky**
- **North Shore Mountains**
- **Metro Vancouver**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 100-140mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 90-160mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Rainfall is expected to taper off by Monday afternoon, with additional amounts of around 50mm expected through the eastern Fraser Valley, and 30-40mm in other areas.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Current conditions include:

- Chilliwack River above Slesse Creek (08MH103) have reached 375 m³/s (approaching a 20-year flow). Additional increases are possible through the day on Monday
- Chilliwack River at Vedder Crossing (08MH001) reached a high of approximately 490 m³/s overnight and has dropped through Monday morning
- Coquihalla River above Alexandra Creek (08MF068) is flowing at approximately 550 m³/s (between a 10-year and 20-year flow) and has leveled over the past few hours. Additional rises are possible through the day on Monday

Rivers through the region are expected to remain high through Monday morning, with improvements expected Monday afternoon as rainfall eases.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected.

Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

UPDATE – Flood Watch – Lower Nicola River (NEW) - Flood Warning – Similkameen River, Tulameen River, Coldwater River - ISSUED: 7:15AM November 15, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 15, 2021 7:09:45 AM PST

UPDATE – Flood Watch – Lower Nicola River (NEW) Flood Warning – Similkameen River, Tulameen River, Coldwater River ISSUED: 7:15AM November 15, 2021

The River Forecast Centre is **issuing** a **Flood Watch** for:

- **Nicola River from Merritt to Spences Bridge**

The River Forecast Centre is **maintaining** a **Flood Warning** for:

- **Similkameen River**
- **Tulameen River and tributaries**
- **Coldwater River**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-185mm range across the Coquihalla, upper Coldwater and Tulameen River watersheds.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is adding additional runoff to rivers.

Rivers have risen rapidly today. Current conditions include:

- Tulameen River at Princeton (Water Survey of Canada gauge 08NL024) has a slowed rate of rise over the past hour and is currently at 4.1m on the gauge. This is beyond the flow estimate range for this station is estimated to be beyond a 50-100 year return period flow
- Tulameen River near Vuich Creek (08NL071) reached 4.35m gauge height earlier on Monday morning and has experienced a slight decrease over the past few hours. This is beyond the flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow
- Coldwater River at Merritt (08LG010) is at 3.1m gauge height. This is beyond the flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow. Continued rises are expected through the morning on Monday
- Similkameen River at Hedley (08NL038) is flowing at 820 m³/s (approaching a 50-year flow) and rising. Additional rises are expected through the morning and potentially the afternoon on Monday
- Nicola River near Spences Bridge (08LG006) is flowing at 270 m³/s (approximately 5-year flow) and rising at approximately 30 m³/s per hour. Additional rises are expected into the afternoon or later Monday and may reach or exceed 400 m³/s (approximately an additional 50 cm of rise at the gauge).

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Fwd: 9 am zoom call on flooding.

From: Manwaring, Richard G FLNR:EX <Rick.G.Manwaring@gov.bc.ca>
To: Muter, David FLNR:EX <David.Muter@gov.bc.ca>, O'Donoghue, Eamon G FLNR:EX <Eamon.ODonoghue@gov.bc.ca>
Sent: November 15, 2021 7:24:15 AM PST

Rick Manwaring
Deputy Minister

Forests, Lands, Natural Resource Operations and Rural Development

Begin forwarded message:

From: "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>
Date: November 15, 2021 at 6:49:20 AM PST
To: "Manwaring, Richard G FLNR:EX" <Rick.G.Manwaring@gov.bc.ca>
Cc: "Lowther, Brett GCPE:EX" <Brett.Lowther@gov.bc.ca>, "Plummer, Glen GCPE:EX" <Glen.Plummer@gov.bc.ca>
Subject: 9 am zoom call on flooding.

Looks like the whole town of Merritt is going to be evacuated. There's a EMBC 9 am zoom call being arranged similar to wildfires. MMF likely to be on. It's to be lead by staff. We were directed to alert ministry DMs. Any staff from FLNR that should be on the call. I'm thinking river forecast.
Sent from my iPhone

UPDATE - Flood Warning – Englishman River (UPGRADED) Cowichan River, Koksilah River - Flood Watch – Southern Vancouver Island - High Streamflow Advisory – West Vancouver Island, East Vancouver Island, Central Vancouver Island - 7:45AM November 15, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 15, 2021 7:42:38 AM PST

**Flood Warning – Englishman River (UPGRADED) Cowichan River, Koksilah River
Flood Watch – Southern Vancouver Island
High Streamflow Advisory – West Vancouver Island, East Vancouver Island, Central Vancouver Island
UPDATE: 7:45AM November 15, 2021**

The River Forecast Centre is **upgrading or maintaining a Flood Warning** for:

- **Englishman River (NEW)**
- **Cowichan River**
- **Koksilah River**

The River Forecast Centre is **upgrading or maintaining a Flood Watch** for:

- **South Vancouver Island (other tributaries)**

The River Forecast Centre is **maintaining a High Streamflow Advisory** for:

- **Central Vancouver Island including tributaries around Port Alberni**
- **South Vancouver Island**
- **West Vancouver Island**
- **East Vancouver Island**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since Saturday have been in the 120-270mm range across Southern Vancouver Island and 60-175mm across Western, Central and Eastern Vancouver Island.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Additional heavy rainfall is expected throughout the region overnight and is expected to taper off around Monday afternoon.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Current conditions include:

- Englishman River near Parksville (Water Survey of Canada gauge 08HB002) is flowing at 350 m³/s and rising. Additional rises are expected through this morning and potentially into the afternoon
- Cowichan River near Duncan (08HA011) is flowing at 510 m³/s (approaching a 20-year return period flow) and rising at 30 m³/s. Additional rises are expected through the day on Monday
- Koksilah River at Cowichan Station (08HA003) is currently flowing at 335 m³/s (approaching a 20-year flow). Additional rises are expected through Monday morning

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected.

Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Flooding - quick update

From: Psyllakis, Jennifer FLNR:EX <Jennifer.Psyllakis@gov.bc.ca>
To: Muter, David FLNR:EX <David.Muter@gov.bc.ca>
Cc: Larkin, Brenda FLNR:EX <Brenda.Larkin@gov.bc.ca>, Chapman, Connie FLNR:EX <Connie.Chapman@gov.bc.ca>
Sent: November 15, 2021 8:23:15 AM PST

Hi David,

Connie just stopped by to update on the flood situation, which is severe in some areas. As you likely know, response at this time is lead by EMBC and regional staff. WMB and the River Forecast Centre is providing support and watching closely where things are at. Connie will be doing a series of check ins this morning and will identify if/when anything changes for our role and on important issues.

Jen

UPDATE - Flood Warning – Coquihalla River - Flood Watch – Sea-to-Sky (NEW), North Shore (NEW), Howe Sound (NEW), Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 8:30AM November 15, 2021

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 15, 2021 8:27:01 AM PST

**Flood Warning – Coquihalla River
Flood Watch – Sea-to-Sky (NEW), North Shore (NEW), Howe Sound (NEW), Fraser Valley,
Fraser Canyon, Chilliwack River
High Streamflow Advisory – South Coast
UPDATE: 8:30AM November 15, 2021**

The River Forecast Centre is **maintaining a Flood Warning** for:

- **Coquihalla River**

The River Forecast Centre is **upgrading to or maintaining a Flood Watch** for:

- **Sea-to-Sky (UPGRADED)**
- **Howe Sound (UPGRADED)**
- **North Shore Mountains (UPGRADED)**
- **Fraser Valley including surrounding tributaries**
- **Fraser Canyon tributaries, including tributaries around Hope**
- **Chilliwack River**

The River Forecast Centre is **maintaining a High Streamflow Advisory** for:

- **Sunshine Coast**
- **Metro Vancouver**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 100-140mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 90-160mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Rainfall is expected to taper off by Monday afternoon, with additional amounts of around 50mm expected through the eastern Fraser Valley, and 30-40mm in other areas.

Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is expected to add additional runoff to rivers.

Rivers have risen rapidly from rainfall since yesterday. Current conditions include:

- Chilliwack River above Slesse Creek (08MH103) have reached 375 m³/s (approaching a 20-year flow). Additional increases are possible through the day on Monday
- Chilliwack River at Vedder Crossing (08MH001) reached a high of approximately 490 m³/s overnight and has dropped through Monday morning
- Coquihalla River above Alexandra Creek (08MF068) is flowing at approximately 550 m³/s (between a 10-year and 20-year flow) and has leveled over the past few hours. Additional rises are possible through the day on Monday

- Stawamus River at Highway 99 (08GA076) is flowing at 85 m³/s (between a 2-year and 5-year flow) and rising at approximately 15 m³/s per hour

Rivers through the region are expected to remain high through Monday morning, with improvements expected Monday afternoon as rainfall eases.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected.

Minor flooding in low-lying areas is possible.

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A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Call-in info for 9am presser

From: Smith, Paula GCPE:EX <Paula.Smith@gov.bc.ca>
To: Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>, Lowther, Brett GCPE:EX <Brett.Lowther@gov.bc.ca>, McInnis, Nigel GCPE:EX <Nigel.McInnis@gov.bc.ca>, Pierson, Nova GCPE:EX <Nova.Pierson@gov.bc.ca>, Bucci, Paul GCPE:EX <Paul.Bucci@gov.bc.ca>, Plummer, Glen GCPE:EX <Glen.Plummer@gov.bc.ca>, Muter, David FLNR:EX <David.Muter@gov.bc.ca>
Sent: November 15, 2021 8:51:43 AM PST

For Immediate Release

Nov. 15, 2021

Ministry of Public Safety and Solicitor General
Emergency Management BC

MEDIA ADVISORY

Mike Farnworth, Minister of Public Safety and Solicitor General, will be joined by officials from Emergency Management BC, the Ministry of Transportation and Infrastructure, and Environment and Climate Change Canada to provide an update on the recent flooding and mudslide events in British Columbia.

Available speakers (subject to change)

- * Mike Farnworth, Minister of Public Safety and Solicitor General
- * Brendan Ralfs, director of response, Emergency Management BC
- * Janelle Staite, South Coast region representative, Ministry of Transportation and Infrastructure
- * Paula Cousins, Interior region representative, Ministry of Transportation and Infrastructure
- * Armel Castellan, Environment and Climate Change Canada

Event Date: Monday, Nov. 15, 2021

Time: 9 a.m. (Pacific time)

Livestream will be available on:

Facebook: <https://www.facebook.com/BCProvincialGovernment/>

Twitter: <https://twitter.com/BCGovNews>

YouTube: <https://www.youtube.com/user/ProvinceofBC>

Media dial-in information:

From anywhere in B.C. and Canada, toll-free: 1-888-892-3255

Participant pass code: 615 111

Paula Smith | Senior Public Affairs Officer
Government Communications and Public Engagement
Ministry of Forests, Lands, Natural Resource Operations and Rural Development
c. 250-880-6549 d. 778 974-4676

Re: Media call this afternoon

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>
To: Muter, David FLNR:EX <David.Muter@gov.bc.ca>, Chapman, Connie FLNR:EX <Connie.Chapman@gov.bc.ca>, White, Ted T FLNR:EX <Ted.White@gov.bc.ca>
Cc: Plante, Laura FLNR:EX <Laura.Plante@gov.bc.ca>, Larkin, Brenda FLNR:EX <Brenda.Larkin@gov.bc.ca>, Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>
Sent: November 15, 2021 10:02:13 AM PST

Thank you David. I've included our comms director for EMBC who is leading this. Timing is TBD but looks to be around 4pm right now.

Many of the questions posed were "why was there no notice given?". MMF was clear that this notice is given to local governments. Would be good to understand when the first alert went from the RFC and how many were issued.

I think this is also something that they are looking to have for QP as well.

Megan

On 2021-11-15, 9:59 AM, "Muter, David FLNR:EX" <David.Muter@gov.bc.ca> wrote:

Hi all.

Connie. Thanks for joining the call this morning

This afternoon there is another media call

My understandings that we may need to provide more details on the River forecast center alerts that have gone out (how many. When and to whom were they sent.)

Laura / Ted. Could you please identify the right person to support this afternoons media call.

Megan - any further specific questions we should be ready for

Brenda could you please make sure call invites get to the right people

Thanks

D

Sent from my iPhone

UPGRADED – Flood Warning – Lower Nicola River | MAINTAINED - Flood Warning – Similkameen River, Tulameen River, Coldwater River | UPDATE: 11:30 AM November 15, 2021

From: Jollymore, Ashlee FLNR:EX <Ashlee.Jollymore@gov.bc.ca>
To: Jollymore, Ashlee FLNR:EX <Ashlee.Jollymore@gov.bc.ca>
Sent: November 15, 2021 11:26:51 AM PST

**UPGRADED – Flood Warning – Lower Nicola River
MAINTAINED – Flood Warning – Similkameen River, Tulameen River, Coldwater River
UPDATE: 11:30 AM November 15, 2021**

The River Forecast Centre is **upgrading a Flood Warning** for:

- **Lower Nicola River**

The River Forecast Centre is **maintaining Flood Warnings** for:

- **Similkameen River**
- **Tulameen River and tributaries**
- **Coldwater River**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 50-185 mm range across the Coquihalla, upper Coldwater and Tulameen River watersheds. Temperatures have been rising, with temperatures in the 5-7°C range being observed at automated snow weather stations across the region. Snowmelt is being observed at mid-elevations and is adding additional runoff to rivers. Rivers have risen rapidly today, with further rain in the forecast through today, Monday November 15th (turning to snow at higher elevations). Current conditions include:

- Tulameen River at Princeton (Water Survey of Canada gauge 08NL024) has peaked early this morning (Nov 15) and is currently at 3.811 m on the gauge. This is beyond the flow estimate range for this station is estimated to be beyond a 50-100 year return period flow
- Coldwater River at Merritt (08LG010) is at 3.48 m gauge height. This is beyond the flow estimate range for this station and is estimated to be beyond a 50-100 year return period flow. Continued rises are possible through Monday, though the rate of increase has slowed.
- Similkameen River at Hedley (08NL038) is flowing at 972 m³/s (approaching a 50-100 year flow) and has begun to peak. Additional rises are possible through Monday afternoon.
- Nicola River near Spences Bridge (08LG006) is flowing at 376 m³/s (near a 50 year flow) and rising rapidly. Additional rises are expected into the afternoon or later Monday and may reach or exceed 400 m³/s.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

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A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

FW: APPROVE PLS: MA - flooding update 4pm today

From: Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>
To: FLNR Executive <EXECUTIVE3@Victoria1.gov.bc.ca>
Cc: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>, Chapman, Connie FLNR:EX <Connie.Chapman@gov.bc.ca>
Sent: November 15, 2021 11:44:14 AM PST
Attachments: MA - Flooding and mudslides-Nov 15 4PM.docx, MA - Flooding and mudslides-Nov 15 4PM NO MFF.docx
FYI from EMBC

From: Wey, Melody GCPE:EX <Melody.Wey@gov.bc.ca>
Sent: November 15, 2021 11:42 AM
To: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Harper, Aimee GCPE:EX <Aimee.Harper@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>; Devereux, Rick GCPE:EX <Rick.Devereux@gov.bc.ca>
Subject: APPROVE PLS: MA - flooding update 4pm today

Hi all- attached is the draft MA for a media update being planned for this afternoon on the flooding, Minister Farnworth's participation is TBC. We're hearing that 4pm will work for a press update- is this good to go? Ric- can you please confirm the dial-in phone # and passcode?

Many thanks, Melody

Melody Wey
Communications Manager
Emergency Management BC
250 508-5030

Nov. 15, 2021

MEDIA ADVISORY - Emergency Management BC – teleconference; livestream

VICTORIA – Media are invited to join Mike Farnworth, Minister of Public Safety and Solicitor General along with officials from Emergency Management BC, the River Forecast Centre, the Ministry of Transportation and Infrastructure, and Environment and Climate Change Canada for an update on the flooding and mudslide events in British Columbia.

Available Speakers (Subject to Change)

- Mike Farnworth, Minister of Public Safety and Solicitor General
- Emergency Management BC representative
- River Forecast Centre representative
- Ministry of Transportation and Infrastructure representatives
- Environment and Climate Change Canada representative

Event Date: Monday, Nov. 15, 2021

Time: 4 p.m. (Pacific time)

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Media dial-in information:

From anywhere in B.C. and Canada, toll-free: 1-888-892-3255

Participant pass code: ^{s.15}

Contact:

Emergency Management BC

Media Relations

250 880-6430

Nov. 15, 2021

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From anywhere in B.C. and Canada, toll-free: 1-888-892-3255

Participant pass code: s.15

Contact:

Emergency Management BC

Media Relations

250 880-6430

RE: Barrowtown pump station information

From: Muter, David FLNR:EX^{s.15}
s.15

To: Chapman, Connie FLNR:EX <Connie.Chapman@gov.bc.ca>

Cc: White, Ted T FLNR:EX <Ted.White@gov.bc.ca>, Plante, Laura FLNR:EX <Laura.Plante@gov.bc.ca>, Psyllakis, Jennifer FLNR:EX <Jennifer.Psyllakis@gov.bc.ca>

Sent: November 16, 2021 11:15:49 PM PST

This is excellent thanks Connie

D

From: Chapman, Connie FLNR:EX <Connie.Chapman@gov.bc.ca>

Sent: November 16, 2021 11:10 PM

To: Muter, David FLNR:EX <David.Muter@gov.bc.ca>

Cc: White, Ted T FLNR:EX <Ted.White@gov.bc.ca>; Plante, Laura FLNR:EX <Laura.Plante@gov.bc.ca>; Psyllakis, Jennifer FLNR:EX <Jennifer.Psyllakis@gov.bc.ca>

Subject: Barrowtown pump station information

Hi David,

Please see the information that Andrew, Jesal, Rudy and regional crew have been able to pull together. We will continue to seek further information tomorrow morning. Let me know if there are any questions or specifics.

Roles:

- The City of Abbotsford owns and operates the Barrowtown Pump Station and under the BC Flood Emergency Plan, are the lead in response.
- City staff and their hired consultants remain subject matter expert leads for operational response
- EMBC supports local governments and First Nations and coordinates support for the local level through the PREOC and PECC structure.
- FLNR Flood Safety supports EMBC through Teams deployments or requests for support. First through regional staff, then through HQ Flood Safety staff (generally at PECC level)
- FLNR RFC provides technical expertise on hydrometric modelling and flow forecasting to support response operations and briefings

Current situation:

- The pump station drains the Sumas Prairie, a low lying bowl that would naturally fill with water within 2-3 days under dry weather if the pump station was inoperable;
- The pumps are currently surrounded by a high water level and are in danger of failing at any time
- The pumps are not designed to pump the volume of water currently experienced
- Current efforts are to reduce the water level around the pumps to extend their operability
- With the breach of the Sumas dike due to saturation, and the potential failure of the Barrowtown pumps, catastrophic flooding is occurring
- There are flood boxes on the Barrowtown Pump that when closed, prevent backflow from the Fraser River. So staff are currently unclear on the mechanism for how Fraser River could back up into Sumas Prairie (as quoted by Mayor Braun to the Vancouver Sun this evening). Also, Fraser flow levels are currently at 1 year levels, which would not normally lead to concern for backflow. Key message - current information indicates that the source of water inflow to Sumas Prairie from the Nooksack River to the south is enough to cause major flooding, regardless of source.

Context (from Exec Summary of 2020 [Nooksack River Overflow Flood Mitigation Plan](#) – funded by fed/prov through NDMP):

“Flooding in the Sumas Prairie is caused by a combination of high flows in the Sumas River watershed and flows from the Nooksack River that overtop its right bank near Everson, Washington and are then conveyed along Johnson Creek and the Sumas River to the Canadian border. Floodwaters cross the Canadian border as overland flows toward low-lying

areas referred to as the Marshall Creek sump, Saar Creek sump and Arnold Slough sump. During extreme flood events, floodwaters in the Sumas Prairie have the potential to overtop and breach the dike system protecting the Old Sumas Lake Bottom, a low-lying agricultural area that was formerly a lake and provided additional storage during flood events. All flows ultimately drain to the Barrowtown Dam, which consists of a flood box and pump system to convey flows from the Sumas River and the Old Sumas Lake Bottom into the lower reach of the Sumas River that joins the Vedder River and discharges into the Fraser River.”

The above document provides further information on potential impacts of similar scenarios and maps. See figure B-4 on p108 (although note that this should not be construed to be an accurate depiction of the current event – for order of magnitude awareness only).

We will provide further updates as information becomes available. Please reach out with any questions.

Thanks

FW: Barrowtown pump station information

From: Muter, David FLNR:EX^{s.15}
s.15
To: Manwaring, Richard G FLNR:EX <Rick.G.Manwaring@gov.bc.ca>
Sent: November 16, 2021 11:16:05 PM PST
Rick

Some further details on this.

Thanks
D

From: Chapman, Connie FLNR:EX <Connie.Chapman@gov.bc.ca>
Sent: November 16, 2021 11:10 PM
To: Muter, David FLNR:EX <David.Muter@gov.bc.ca>
Cc: White, Ted T FLNR:EX <Ted.White@gov.bc.ca>; Plante, Laura FLNR:EX <Laura.Plante@gov.bc.ca>; Psyllakis, Jennifer FLNR:EX <Jennifer.Psullakis@gov.bc.ca>
Subject: Barrowtown pump station information

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the Sumas River to the Canadian border. Floodwaters cross the Canadian border as overland flows toward low-lying areas referred to as the Marshall Creek sump, Saar Creek sump and Arnold Slough sump. During extreme flood events, floodwaters in the Sumas Prairie have the potential to overtop and breach the dike system protecting the Old Sumas Lake Bottom, a low-lying agricultural area that was formerly a lake and provided additional storage during flood events. All flows ultimately drain to the Barrowtown Dam, which consists of a flood box and pump system to convey flows from the Sumas River and the Old Sumas Lake Bottom into the lower reach of the Sumas River that joins the Vedder River and discharges into the Fraser River.”

The above document provides further information on potential impacts of similar scenarios and maps. See figure B-4 on p108 (although note that this should not be construed to be an accurate depiction of the current event – for order of magnitude awareness only).

We will provide further updates as information becomes available. Please reach out with any questions.

Thanks



Early Warning Note

Date: November 15, 2021 **CLIFF: 268233**

Email to: Eamon O'Donoghue, A/Associate Deputy Minister
Email to: David Haslam, **Communications Director, GCPE**
Email to: Paul Rasmussen, Assistant Deputy Minister
CC to: **Director, Executive Operations, DMO**
Manager, Executive Issues, DMO
FLNR Deputy Minister Inbox (FLNR.DMO@gov.bc.ca)

From: FLNR Water Management, 1259 Dalhousie Road, Kamloops
Contact: **Trevor Bohay** Ph: 250-312-7421

Issue: Flooding and evacuations in Merritt and Princeton – November 14-15, 2021

Briefing Note to follow: No

Background:

- Heavy rainfall on November 14-15 caused by what Environment Canada terms an 'atmospheric river' has resulted in flooding and numerous evacuations within the west portion of the Thompson Okanagan region, specifically in Merritt and Princeton.
- Merritt: FLNR received reports of flooding beginning on Sunday evening. Flows in the Coldwater River rose from approximately 15 cubic metres/second (cms) to >350 cms in less than 24 hours. The city of Merritt is on full evacuation due mainly to impacts to the City sanitary sewer system. This has impacted FLNR's local staff who must evacuate rather than provide needed assistance. Other offices are assisting.
- Communities downstream of Merritt along the Nicola River may also be at risk as the river continues to rise.
- Princeton: The town evacuated over 270 homes late Sunday night. The Tulameen River breached its banks in multiple locations.
- The Similkameen River downstream of Princeton continues to rise. Communities at risk include Keremeos and the Lower Similkameen Indian Band.
- FLNR staff have been attending calls organized by EMBC starting Sunday Nov. 14, overnight and throughout Monday.
- On Monday afternoon (Nov. 15), FLNR Water Management staff are conducting site reconnaissance flights. Staff will be assessing certain dikes and dams/reservoirs to determine if any are showing signs of breaching and observing roads or bridge washouts. Reconnaissance reports will be submitted to EMBC for distribution to local communities and MOTI.
- River levels are expected to remain high into Monday evening. The forecast is for rain to ease during the evening before a drying and cooling trend begins on Tuesday the 16th.
- There are numerous closures of Provincial highways due to debris flows and washouts.



Suggested Response:

- FLNR staff have been aware of increased risk of natural hazard and flooding because of the wildfires. While the atmospheric river that caused the flooding could not be anticipated, staff have responded as per the BC Flood Plan.
- FLNR have undertaken initial post wildfire natural hazard risk assessments by a geotechnical professional. Those assessments which identified areas of risk to public safety, buildings and critical infrastructure have been selected for more in depth study. These reports will be provided by end of the year. Additionally, FLNR staff have been busy planning and rehabilitating fire guards including grass seeding fire guards as well as areas of steep slopes both aerially and by hand. FLNRO rehabilitation work will continue until precluded by snow accumulation. MoTI have been assessing and clearing key stream crossing infrastructure. Due to the recent events and where possible MOTI crews will be out assessing infrastructure and repairs/clean-up will begin as soon as it is safe to do so. The extent of the damage on many of our highways is unknown at this time so estimated times of opening are not available.

From: Newcombe, Samantha FLNR:EX <Samantha.Newcombe@gov.bc.ca>
To: Monroe, Danielle FLNR:EX <Danielle.Monroe@gov.bc.ca>, Malo, Courtney FLNR:EX <Courtney.Malo@gov.bc.ca>, Andrews, Scott FLNR:EX <Scott.Andrews@gov.bc.ca>, Brown, Edena FLNR:EX <Edena.Brown@gov.bc.ca>, Jones, Tristan FLNR:EX <Tristan.Jones@gov.bc.ca>, Cuddy, Andrew FLNR:EX <Andrew.Cuddy@gov.bc.ca>
Sent: November 15, 2021 4:25:24 PM PST
Attachments: 268233 - ewn Flooding Nov 15 2021 .pdf, 268233 - ewn Flooding Nov 15 2021 .doc, image001.png

Hi everyone,
Find attached an EWN sent to the Minister.
Thank you,
Sam



Samantha Newcombe (*she/her*)

Administrative Assistant to the

Honourable Katrine Conroy

Minister of Forests, Lands, Natural Resource Operations and Rural Development

t 250.387-6240 f 250.387.1040

**I acknowledge and respect that I live, learn, and work on the traditional territories of the Lkwungen Peoples on whose traditional territories the Lkwungen (Songhees), Wyomilth (Esquimalt), and W̱SÁNEĆ (Saanich) peoples have a continuous relationship with.*

***Please note: This email message, including attachments, is intended for the addressee(s) only and may contain legally privileged information. Any unauthorized use, distribution, disclosure or reproduction is strictly prohibited. If you have received this email in error, please notify sender by return email and delete all copies*



Early Warning Note

Date: November 15, 2021 **CLIFF: 268233**

Email to: Eamon O'Donoghue, A/Associate Deputy Minister
Email to: David Haslam, **Communications Director, GCPE**
Email to: Paul Rasmussen, Assistant Deputy Minister
CC to: **Director, Executive Operations, DMO**
Manager, Executive Issues, DMO
FLNR Deputy Minister Inbox (FLNR.DMO@gov.bc.ca)

From: FLNR Water Management, 1259 Dalhousie Road, Kamloops
Contact: **Trevor Bohay** Ph: 250-312-7421

Issue: Flooding and evacuations in Merritt and Princeton – November 14-15, 2021

Briefing Note to follow: No

Background:

- Heavy rainfall on November 14-15 caused by what Environment Canada terms an 'atmospheric river' has resulted in flooding and numerous evacuations within the west portion of the Thompson Okanagan region, specifically in Merritt and Princeton.
- Merritt: FLNR received reports of flooding beginning on Sunday evening. Flows in the Coldwater River rose from approximately 15 cubic metres/second (cms) to >350 cms in less than 24 hours. The city of Merritt is on full evacuation due mainly to impacts to the City sanitary sewer system. This has impacted FLNR's local staff who must evacuate rather than provide needed assistance. Other offices are assisting.
- Communities downstream of Merritt along the Nicola River may also be at risk as the river continues to rise.
- Princeton: The town evacuated over 270 homes late Sunday night. The Tulameen River breached its banks in multiple locations.
- The Similkameen River downstream of Princeton continues to rise. Communities at risk include Keremeos and the Lower Similkameen Indian Band.
- FLNR staff have been attending calls organized by EMBC starting Sunday Nov. 14, overnight and throughout Monday.
- On Monday afternoon (Nov. 15), FLNR Water Management staff are conducting site reconnaissance flights. Staff will be assessing certain dikes and dams/reservoirs to determine if any are showing signs of breaching and observing roads or bridge washouts. Reconnaissance reports will be submitted to EMBC for distribution to local communities and MOTI.
- River levels are expected to remain high into Monday evening. The forecast is for rain to ease during the evening before a drying and cooling trend begins on Tuesday the 16th.
- There are numerous closures of Provincial highways due to debris flows and washouts.



Suggested Response:

- FLNR staff have been aware of increased risk of natural hazard and flooding because of the wildfires. While the atmospheric river that caused the flooding could not be anticipated, staff have responded as per the BC Flood Plan.
- FLNR have undertaken initial post wildfire natural hazard risk assessments by a geotechnical professional. Those assessments which identified areas of risk to public safety, buildings and critical infrastructure have been selected for more in depth study. These reports will be provided by end of the year. Additionally, FLNR staff have been busy planning and rehabilitating fire guards including grass seeding fire guards as well as areas of steep slopes both aerially and by hand. FLNRO rehabilitation work will continue until precluded by snow accumulation. MoTI have been assessing and clearing key stream crossing infrastructure. Due to the recent events and where possible MOTI crews will be out assessing infrastructure and repairs/clean-up will begin as soon as it is safe to do so. The extent of the damage on many of our highways is unknown at this time so estimated times of opening are not available.