

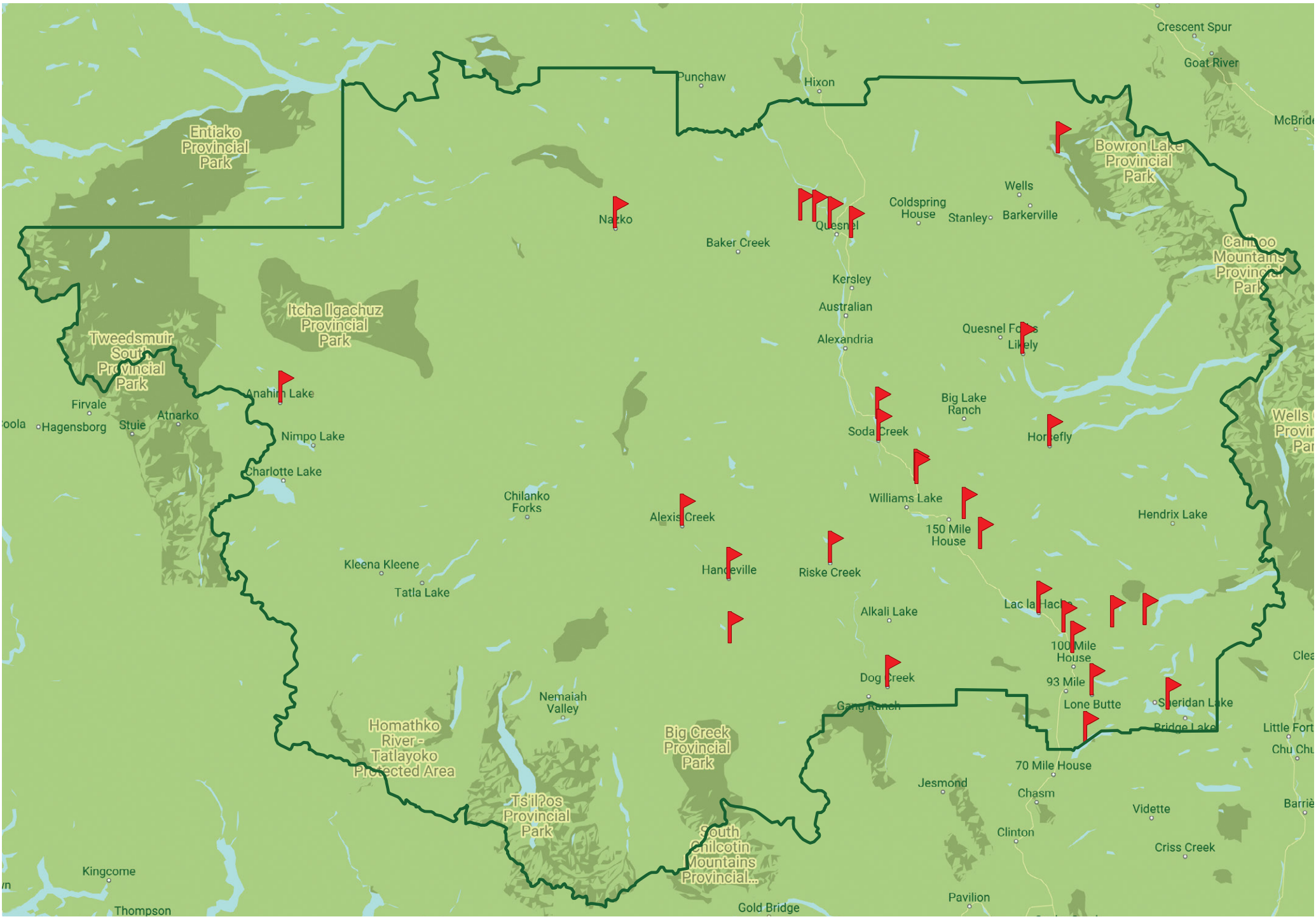
TASK # 210182

Flood & Landslide 2020 Recovery Plan

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Photo taken by CRM



Reported property damage due to flooding

BACKGROUND

Starting early April 2020 (April 7 to 11) the CRD received reports of flooding in Lac La Hache (CRD Electoral Area G), and in CRD Area D from the residential area of Wildwood along Minton Creek.

The situation deteriorated April 16, and the CRD leveled-up its Emergency Operations Centre (EOC) to provide response support to properties in Nazko and Blackwater (CRD Area I).

By late morning April 17, additional reports were received from electoral areas F, L, H, K.

The CRD declared a state of local emergency (S.O.L.E.) on April 22, 2020.

On April 25, 2020, the CRD supported an application to Disaster Financial Assistance citing 89 active response records for flooding ranches/agricultural operations, businesses and residential properties across 10 electoral areas, and 3 active response records for landslide impacted residential properties.

Reported flood impacts on primary residential and business properties include:

- > private road washouts, private bridge and culvert displacement and/or inundation, flooded crops, feed stores
- > stranded livestock/pack animals and people, flooded houses and outbuildings
- > flooded drinking water systems, wells and septic fields/ponds and increased turbidity in waterways and lakes
- > tension cracks, land slippage and foreshore erosion

Flood Recovery coordination and support by Provincial and local government over the short-term recovery phase (6 months):

- > May 7, 2020 Disaster Financial Assistance declared for the April 15 to May 3 rain event
- > Staffed CRD Regional Flood Recovery Manager, EOC Recovery & Community Recovery Coordinator roles
- > CRD Disaster Recovery information line activated
- > CRD Disaster Recovery webpage and communications developed, updated, and maintained
- > July 17, 2020, a second Disaster Financial Assistance declaration announced for the June 14 to July 13 rain event
- > Coordination with Community Volunteers (Team Rubicon) to support site specific recovery as needed



*Photo supplied.
Soda Creek farmer harvests crop by boat*

RECOVERY PLANNING BASIS

- a) To identify early recovery needs for the CRD and area communities within 30 days
- b) To achieve buy in from the communities *(measured as participation of the majority in recovery activities)*
- c) To review status of community recovery at 3 months
- d) To coordinate early recovery activities for the CRD unincorporated communities affected by spring flooding 2020 throughout the short term *(May through October 2020)* addressing all four pillars of community recovery *(social, economic, infrastructure and environmental)*
- e) To monitor and address emerging unmet community recovery needs in coordination with community and external support systems *(May through October 2020)*
- f) To produce a mid-term recovery plan with a transition strategy to the CRD for long term activity monitoring and advocacy

KEY ROLES IN CRD SUMMER FLOOD COMMUNITY RECOVERY

COMMUNITY LEADERSHIP – CRD AND COMMUNITY

Community Recovery Manager,
regional coordination and management

Community Recovery Coordinator,
local community representation *(Nagko)*

EOC Recovery, supporting short term recovery
planning and activities

PROVINCIAL LEADERSHIP - PROVINCE OF BC

EMBC *(DFA, Regional Manager(s), Disaster
Recovery Branch, PREOC Recovery)*

HEMBC *(Health Emergency Management BC)*

MoTI *(Roads Maintenance Contractor)*

FLNRORD *(Water Management, Range, Weeds)*

MoA *(Ministry of Agriculture)*

IHA, NHA *(Emergency Management,
Environmental Health)*

CANADIAN FEDERAL PARTICIPATION

Department of Fisheries and Oceans

NON-GOVERNMENT PARTICIPATION – NGOS

Team Rubicon, providing assistance on
a case-by-case basis to property owners

Community Recovery

Community Recovery is laid out in the document “Recovery Guide for Local Authorities and First Nations” 4th Edition, August 27, 2019 by Emergency Management BC and provides the following information which framed the activities of CRD Recovery:

Recovery is community-led, complex, and can take years to complete. It requires a collaborative effort from many partners to build resilience.

Recovery consists of three stages: short-term, medium-term and long-term. The timing of the transition between these stages will vary depending on the circumstances. Short-term activities begin as soon as possible following a disaster, generally after life-saving actions are complete. In some cases, recovery activities may be conducted at the same time as response activities.

Recovery is the phase of emergency management which aims to:

- > Repair communities affected by a disaster
- > Restore conditions to an acceptable level, or when possible, improve them, and
- > Restore self-sufficiency and increase resilience in individuals, families, organizations, and communities

Resilience is a key component of recovery and is defined as the capacity to recover quickly from disaster. It includes the ability to cope or adapt in the face of adversity, trauma, tragedy, threats or stress.

There are four benefits for local authorities and First Nations engaging in community recovery:

- > Reduce Human Suffering through a coordinated recovery effort that directly helps residents of BC return to normal as quickly as possible
- > Protect Community Culture by bringing together the community to support those residents most impacted. The entire character of a community can be influenced by how its leaders manage the recovery process
- > Reduce Economic Losses by using the recovery process to encourage growth in every sector of the local economy. Successful recovery means greater market share for new businesses and non-government organizations seeking a place to set up shop.
- > Enhance a Sustainable Community by promoting risk reduction, resilience, and “build back better” so that residents are better able to withstand future disasters. Build Back Better refers to more than just infrastructure. It’s an opportunity to build resilience and capacity within the community and focus on disaster risk reduction.

Recovery has four sectors —also referred to as the “pillars of recovery” and these are utilized within this plan. Each recovery sector is interconnected and is central to the recovery process. These four pillars are:

1. People and Communities – physical, mental and social wellbeing; health and safety; mental health; interim housing; community psychosocial, emotional, cultural and spiritual wellbeing
2. Economy – small, medium and large enterprises; tourism; agriculture; cultural livelihood; broader economy
3. Environment – land degradation and contamination; biodiversity and ecosystems impacts; natural resource damage and loss
4. Infrastructure – private and public physical infrastructure; residential and commercial buildings; infrastructure planning; mitigation and protective works; critical infrastructure such as utilities, communication networks, roads and bridges, and transportation

FLOOD IMPACTS & EARLY RECOVERY NEEDS

ECONOMIC, SOCIAL & INFRASTRUCTURE

Public and private road recovery (*includes highways, forest service roads, private roads, driveways, culverts, bridges*) for egress, transportation, access to water systems, range and hay fields.

ECONOMIC, SOCIAL, INFRASTRUCTURE & ENVIRONMENT

Debris removal, ie. residential and outbuilding repairs, deposits of garbage, infrastructure from other properties, woody debris, rock, gravel and sediment on private properties and agricultural lands.

Flood waters inundated and contaminated some drinking water and septic systems.

ECONOMIC

Loss of forage for cattle, pack animals, sheep, etc. repair or replacement of fences and irrigation systems, range access roads. Road closures cause long detours, adding hours to trips to town for business, medical, education, and social connectedness.

ENVIRONMENTAL

Invasive plant monitoring (*invasive plants are redistributed by flood waters, debris, road repairs and transportation activities*).

SOCIAL

Landslides and road closures have divided communities and families, interfering with social connectedness and “normal” day to day activities. Some homes are vacant due to long term evacuation orders and ongoing hazards.



Field hay has been lifted, pushed and deposited high in trees or fencing

SHORT-TERM RECOVERY RESOURCES & SOLUTIONS – Emerging May through September 2020

CRD Recovery Management

Recovery planning and short-term implementation of planned activities to assist building back at the regional and household level.

SUPPORTING ALL FOUR PILLARS OF RECOVERY WITH SPECIAL FOCUS ON BUILDING BACK BETTER AND LONG-TERM COMMUNITY LED RECOVERY

RECOVERY RATIONALE: Listening and seeking to understand and address common impacts of disaster (*flood and landslide*), assist response agencies to more clearly tally damages and loss, and further to improve systems for future response and recovery based on lessons learned, identified gaps, and to act as an advocate for system change to address issues in advance (*mitigation to lessen the duration and severity of future emergency events*).

Disaster Financial Assistance

Following a disaster, the provincial government may declare the event eligible for DFA). Once declared, the DFA program may compensate individuals for essential uninsurable losses and/or reimburse local governments for damaged infrastructure.

The CRD advocated to the Province for a DFA declaration for the April/May 2020 and June/July flood events. DFA was declared for all municipalities and first nation communities in the CRD. Application deadlines: August 5 & October 16, 2020

SUPPORTING SOCIAL, ECONOMIC, INFRASTRUCTURE AND ENVIRONMENTAL RECOVERY

RECOVERY RATIONALE: Many losses were uninsured. The significant work to remove debris, repair buildings, public/private infrastructure and return to normal

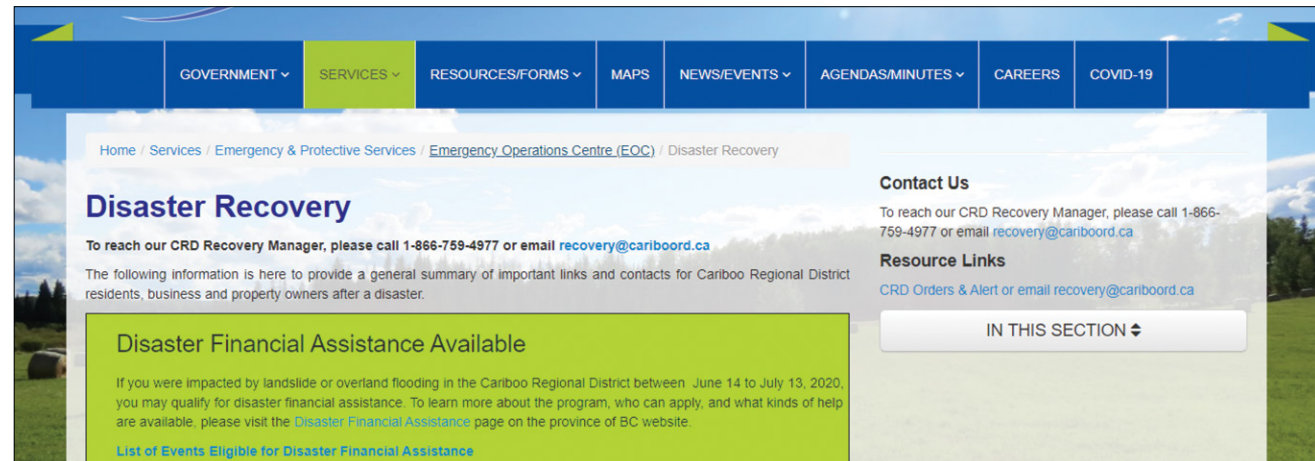
require external funding to support these works to completion.

CRD Communications


Website recovery page updates and toll-free recovery line staffed to connect community with resources and to monitor recovery activities for gaps and additional resourcing.

SUPPORTING ALL FOUR PILLARS OF RECOVERY WITH SPECIAL FOCUS ON SOCIAL SUPPORTS

RECOVERY RATIONALE: Reliable and consistent communication channels targeted to key audiences will support accessible and timely resources reducing prolonged challenges at the community level.



CRD Recovery webpage

B.C. has declared a state of emergency. Learn about COVID-19 health issues . B.C.'s response to COVID-19 .	
	
Date of event:	April 20 to July 7, 2020
90-Day Deadline for Applications:	November 3, 2020
DFA Event Details	
Geographic Area (subject to change):	All First Nation communities, electoral areas and municipalities within the geographic boundaries of the following regional districts and municipalities: <ul style="list-style-type: none">Cariboo Regional DistrictFraser Fort George Regional DistrictPeace River Regional DistrictNorthern Rockies Regional Municipality
Type of event:	Landslide and Overland Flooding
Date of event:	June 14 to July 13, 2020

DFA website

Transportation Route Recovery

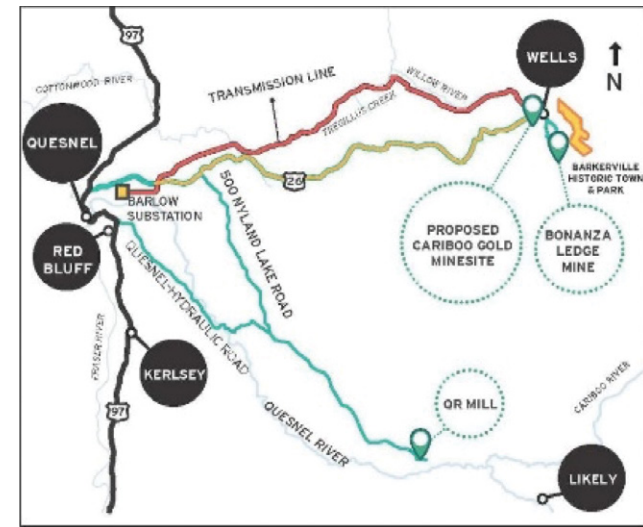
Coordination between MoTI, FLNRORD, Roads Maintenance Contractors and Licensees to repair road networks to ensure safe and reliable transportation. During the first event there were in excess of 100 incidents in the first week that required MOTI response. Bridges and all types of roads, including Highway 97, were seeing unprecedented issues.

Hydraulic Road and the Soda Creek-Macalister Road experienced substantial slide activity. While an alternate route has been established and is being maintained, it is reported that the Hydraulic Road slide creates ongoing hardships (affecting all four pillars of recovery) for the residential population of this area. Hydraulic Road continues to have a high-water table with water seepage from banks and danger trees surrounding the landslide site. This will make remediation of this road more difficult.

In addition, Barkerville Gold Mine plans on utilizing 500 Nyland Lake Road and the Hydraulic Road to reach its QR Mill Site. This additional heavy traffic load on the previously unaffected portion of Hydraulic Road will increase the difficulty for residents and agriculture producers. A comparison could be made to the activity on Maple Drive after heavy traffic was rerouted to this road and the affect this had on environment, road conditions and properties.

SUPPORTING ECONOMIC, INFRASTRUCTURE AND SOCIAL RECOVERY

RECOVERY RATIONALE: Transportation routes are necessary for day to day economic, cultural, social needs while interconnectivity to larger centres for supplies, services and immediate needs are fundamental to community health and wellbeing.



Photos taken by CRM/CRC

Hwy 97

Well Water Testing

Interior Health Authority and Northern Health Authority have offered well water testing for bacteria to impacted community members who had concerns about the quality of drinking water after many wells were inundated throughout the flooding.

SUPPORTING SOCIAL, INFRASTRUCTURE AND ENVIRONMENTAL RECOVERY

RECOVERY RATIONALE: Many private wells, pumps and septic systems were impacted through the rain event resulting in an advisory being issued regarding water use. The water testing will provide assurance for both IHA/NHA and households that their water is safe to drink and the advisory can be lifted. IHA/NHA Environmental Health officers will work with homeowners to plan for remediation as needed.

Invasive Plant Species Monitoring

Invasive weeds have been a recovery concern as the flooding that occurred through the rain event may have brought seeds and plants to hay fields impacting agriculture operators.

SUPPORTING ECONOMIC, INFRASTRUCTURE AND ENVIRONMENTAL RECOVERY

RECOVERY RATIONALE: Most of the agriculture operators impacted utilize their own hay crops for feed



or for sale. The occurrence of invasive weeds within hay fields lowers the value of the crop and creates ongoing field maintenance issues for the operator. Partnering with existing Invasive Weed programs in the region will allow ongoing monitoring and remediation solutions.

Debris Removal and Waste Management

In response to the many calls for assistance since early April 2020, sand and sandbags were deployed to each electoral area's central sites. CRD Environmental Waste Management Services facilitated disposal of used sandbags or flood damaged residential debris at CRD Transfer stations across the region. Debris includes field hay that was deposited high up on trees or fencing as well as building materials, irrigation equipment and culverts that have been moved from other sites.

SUPPORTING ENVIRONMENTAL RECOVERY

RECOVERY RATIONALE: Assisting residents and supporting environmental recovery by providing marshalling sites to receive flood waste to ensure appropriate disposal of debris.

Emergency Support Services

Temporary Accommodations & Meals – the CRD advocated for ESS support for 7 people over the course of the event, 6 were long term.

SUPPORTING SOCIAL AND ECONOMIC RECOVERY AT THE HOUSEHOLD LEVEL

RECOVERY RATIONALE: Shelter and nourishment are basic needs. Providing assistance to cover the costs of basic housing and food, reduces a common stress point for individuals and families remaining away from primary residences for prolonged periods of time.



Photos taken by CRM

In the case of landslide, this period can be much longer than in fire or flood scenarios due to the need for land stability monitoring and assessments, aide/ insurance eligibility decisions, resource coordination and clarification on roles and responsibilities. There are opportunities for improved coordination.

UNMET NEEDS

It is understood that not all applications to the DFA program will be successful; unmet needs will emerge and will require advocacy and community-based solutions. Additional considerations and anticipated recovery resource gaps leading to complex unmet needs in the following areas should be monitored for advocacy, recovery intervention, and action as appropriate:

Economic Recovery – Agriculture Production

FEED/FORAGE

Agricultural producers in the southern region may have problems sourcing hay for winter feed depending on when they are able to get a second cut and the quality/quantity of that second cut. Some fields will not be in production this year due to flooding.

Hay testing has been done on a number of south Cariboo fields and as expected showed fluctuations in the nutritional value of the feed. In some cases, sugar levels of 20% were recorded while protein levels were low, in some cases between 6 – 10%. This nutritional imbalance will mean that producers will need to supplement their feed and for some livestock varieties this hay will be unusable due to the high sugar content.

In August 2020 the Provincial Government announced that in response to the COVID-19 pandemic, all existing farm class properties will automatically retain farm class for the 2021 assessment roll. Due to the ongoing economic difficulties to be faced by agricultural producers in the Hydraulic Road catchment there may be an opportunity for the CRD to have a leadership role in advocating for this farm classification to be extended until such time as Hydraulic Road has been remediated.

Dry Matter				91.6
PROTEINS	% SP	% CP	% DM	
Crude Protein			4.3	
Adjusted Protein				
Soluble Protein		41.5	1.8	
Ammonia (CPE)	32.2	13.4	0.58	
ADF Protein (ADICP)		16.4	0.71	
NDF Protein (NDICP)		33.2	1.44	
NDR Protein (NDRCP)				
Rumen Degr. Protein		70.7	3.1	
Amino Acid Protein, Total				
FIBER	%ND Fom	NDFom %DM	% NDF	% DM
ADF			60.0	39.1
aNDF		64.7		65.3
NDR (NDF w/o sulfite)				
Crude Fiber				
Lignin			8.92	5.82
NDF Digestibility (12 hr)				
NDF Digestibility (24 hr)				
NDF Digestibility (30 hr)	52.0	33.6	51.4	33.5
NDF Digestibility (72 hr)				
NDF Digestibility (120 hr)	56.0	36.2	55.5	36.2
NDF Digestibility (240 hr)	59.1	38.2	58.4	38.1
uNDF (12 hr)				
uNDF (30 hr)	48.0	31.1	48.6	31.7
uNDF (120 hr)	44.0	28.5	44.5	29.1
uNDF (240 hr)	40.9	26.5	41.6	27.1
CARBOHYDRATES	% Starch	% NFC	% DM	
Silage Acids				
Ethanol Soluble CHO (ESC-Sugar)		43.6	11.7	
Water Soluble CHO (WSC-Sugar)			19.6	
Starch	4.4		1.2	
Soluble Starch				
Soluble Fiber				
Starch Dig. (7 hr, 4 mm)				
Crude Fat				2.06
Fatty Acids, Total				0.59
C16:0				0.15
C18:0				0.01
C18:1				0.05
C18:2				0.11
C18:3				0.11
Unsaturated Fatty Acids (RUFAL)				0.27
Fatty Acids (%Fat)				28.6

FENCING

There may be resource gaps occurring around field and property fencing. Fence posts that are saturated with water can fall over, rot, pop out, eject staples, and pull-down wires that are prone to rusting resulting in low fence areas that are easy for livestock to cross. These issues may not be immediately apparent or easily found by local producers and could persist long term.



Photo taken by CRM.
Water over a fence line that is covered in debris

Economic Recovery – Transportation Routes

ROAD REPAIR COMPLETIONS

MOTI road remains closed at Hydraulic long term due to landslide slope instability delaying repairs in the short term.

Completing transportation route repairs are necessary for day to day economic, cultural, social needs while interconnectivity to larger centres for supplies, services and immediate needs are fundamental to community health and wellbeing. MOTI has been monitoring the situation and has improved the French Road as an alternate route.

HYDRAULIC ROAD

Area A residents in this subdivision will be experiencing a level of unmet needs for the foreseeable future. Resource gaps in road repair, winter preparation, and potentially access to education as well as yet undetermined needs will continue to be unmet. At this time, most of the Hydraulic Road unmet needs will be resolved once the slide area road repairs are completed.

Early in the recovery phase, it had been recommended that MOTI to create a webpage similar to the West Fraser Road Flood Recovery (<https://www.gov.bc.ca/westfraserroad>) to assist in timely communication with residents regarding the province's commitment to resolve the challenge. A website such as this would establish communication with the community, provide a readily available resource to refer to and build trust with the residents through a reliable communication channel.

Psychosocial Recovery – Mental Health

DISASTER-SPECIFIC MENTAL HEALTH SUPPORTS

While volunteer staffed telephone crisis lines are immediately available across the province, relatable, timely, local and appropriate mental health supports are not largely accessible in rural and remote areas in this region. Long wait times, reduced hours of staffing due to COVID-19 (or other resource challenges), and reliance on standard programming, leaves gaps in typical systems of support that under-serve disaster impacted residents.

Environmental Recovery – Landslide on private property

RECOVERY PLANNING & ASSISTANCE

There are significant gaps in terms of landslide recovery resources. While the Disaster Financial Assistance program may offer a solution for a few cases, the overall absence of a robust provincial landslide plan (response and recovery) leaves local government and area residents impacted by multiple and compounding issues that have no clear solution: long term landslide evacuation orders and ongoing dangers, landscape level issues such as tension cracks or land slippage, devalued assets and mounting costs, delayed access to information, and minimal recovery resources all add stress and confusion to the list of impacts affecting private property owners. Building back better and stronger requires assistance, funding, leadership, resourcing, and appropriate guidance for landowners.

STRATEGIC CRD RECOVERY PRIORITIES, OBJECTIVES, ACTIONS & STATUS: *Immediate to Long-Term*

PRIORITY 1: *Achieve participation at the community level to support community-driven recovery*

GOALS & OBJECTIVES

Focus recovery communications and planning primarily on community engagement to gauge barriers to participation in recovery activities to reduce long term unmet needs.

- a) Timely messaging and access to recovery personnel (in EOC and into early recovery phase)
 - Implemented April 2020, ongoing. The CRD began planning for recovery in the EOC, and recovery focused information was developed and broadcast (updated webpage, emailed, news releases and social media, recovery information phone line and contact details, etc.).
- b) Secure funding for community recovery coordinator and recovery manager contracts to meet CRD and community recovery goals and requesting some flexibility in agreements (EAF/funding) to maintain community engagement and input on priorities and planning
 - Implemented May 2020, ongoing until October 17, 2020.

- c) Engage a local representative (Community Recovery Coordinator) to assist in coordination and communication at the community level by identifying local audience (community culture) and modifying communication channels as appropriate to provide access to recovery information and key messaging
 - Implemented May 2020. Onboarded a local area resident to act as Community Recovery Coordinator to foster local recovery communication channels and identify unmet needs.
 - Completed June 2020.

PRIORITY 2: *Develop an event specific recovery plan based on community input*

GOALS & OBJECTIVES

Clarify recovery roles & accountabilities for task completion to meet timelines and to facilitate long-term community-driven recovery.

- a) Determine schedule for recovery program monitoring and promotion to reduce access challenges and increase uptake of supports – Regular coordination calls established with key players, regular meetings with CRD Recovery team, regular check-ins with PREOC Recovery to discuss successes, challenges, opportunities and status.
 - Implemented May 2020, ongoing.

- b) Maintain an up to date inventory of relevant programs and accessible solutions to support community and households. Review CRD recovery webpage and update as needed to reflect emerging recovery resources and solutions.
 - Implemented April 2020, ongoing.

The CRD will launch its new website in late 2020 and the CRD's Disaster Recovery Page will be updated as needed and maintained in-line with the planned site upgrades.

- c) Improve interagency (CRD & Provincial) communications to facilitate timely solutions to identify and address emerging unmet needs.
 - In progress, September 2020.
- d) Facilitate community leadership and community solutions for long-term recovery.
 - Initiated June 2020 with engaging Team Rubicon as a community volunteer group to support local recovery on a case-by-case basis to reduce unmet needs and support recovery at the community level.
 - Additional referrals were made to Community Futures, Ministry of Agriculture, Family Support Institute of BC, Red Cross, Mental Health and Crisis Lines.

PRIORITY 3: Monitor process improvements to reduce recovery issues and challenges to promote community recovery

GOALS & OBJECTIVES

Monitor, evaluate and improve. **This is a particular need with regards to future landslide activity.**

- a) Monitor for community level and CRD level recovery challenges, working together with the Province of BC (EMBC Regional Manager) to address issues to promote recovery (*low participation by other ministries at times*).
 - Ongoing, transition to CRD long term
- b) Evaluate communication and engagement approaches to maintain correspondence with community to promote recovery solutions and adjust as needed.
- c) Create opportunities for cross-departmental collaboration on emergency planning (*ie. land use planning informed by protective services hazard, risk, and vulnerability assessments*)
- d) Establish a multi-agency working group to create regional-provincial support guidelines for structures that are threatened by watercourses and/or known risks and hazard areas (*ie. identified historic landslide areas, etc.*)

PRIORITY 4: Position recovery as a strategic priority throughout the mid to long-term (6 months to 5 years, October 2020 and beyond)

GOALS & OBJECTIVES

To maintain recovery themes and considerations in planning, strategies, and activities to support long term recovery action across the region.

- a) Maintain recovery as a standing agenda item (CRD Protective Services Committee) to ensure CRD recovery activity and issues are monitored long term
- b) Include a budget line item for recovery in the CRD Emergency Planning annual budget and five-year financial plan to support actioning of community recovery activities, short and long-term
- c) Coordinate between service areas to reduce policy, process, and access challenges to community recovery activities after disaster.



EVALUATIVE MEASURES

1. Post disaster recovery program & resource information is accessible for the target audience (*DFA, communications coordination, etc.*).

METHOD: track number of early recovery programs/ resources (*emerging 1 week to 6 months post disaster*).

MEASURE: number of program applications, recovery website views, calls to the toll-free recovery line to determine community needs and appropriate resource allocation.

2. Emerging recovery needs are identified, monitored, and addressed in a timely manner.

METHOD: assess unmet needs regularly and coordinate to advocate and resolve issues.

MEASURE: number of solutions and community involvement in long-term recovery activities.

TRANSITION STRATEGY

When the provincial funding for retaining a recovery manager and recovery unit is exhausted, it is necessary for the management of the recovery phase to transition from external contractor(s) to the local government for long term activity monitoring and advocacy.

1. Submit Flood 2020 recovery plan.
2. Contractor(s) & CRD meet regarding status, and resource review, hand over.
3. CRD dedicate a point of contact for community recovery follow up and monitoring of long-term unmet needs and complex cases associated with the 2020 flood emergency events.

4. CRD continues to update and promote the Disaster Recovery webpage for longer term needs coordination and resource sharing.
5. CRD track resource needs, recovery activities, and costs associated to support planning for future flood response and recovery activations.