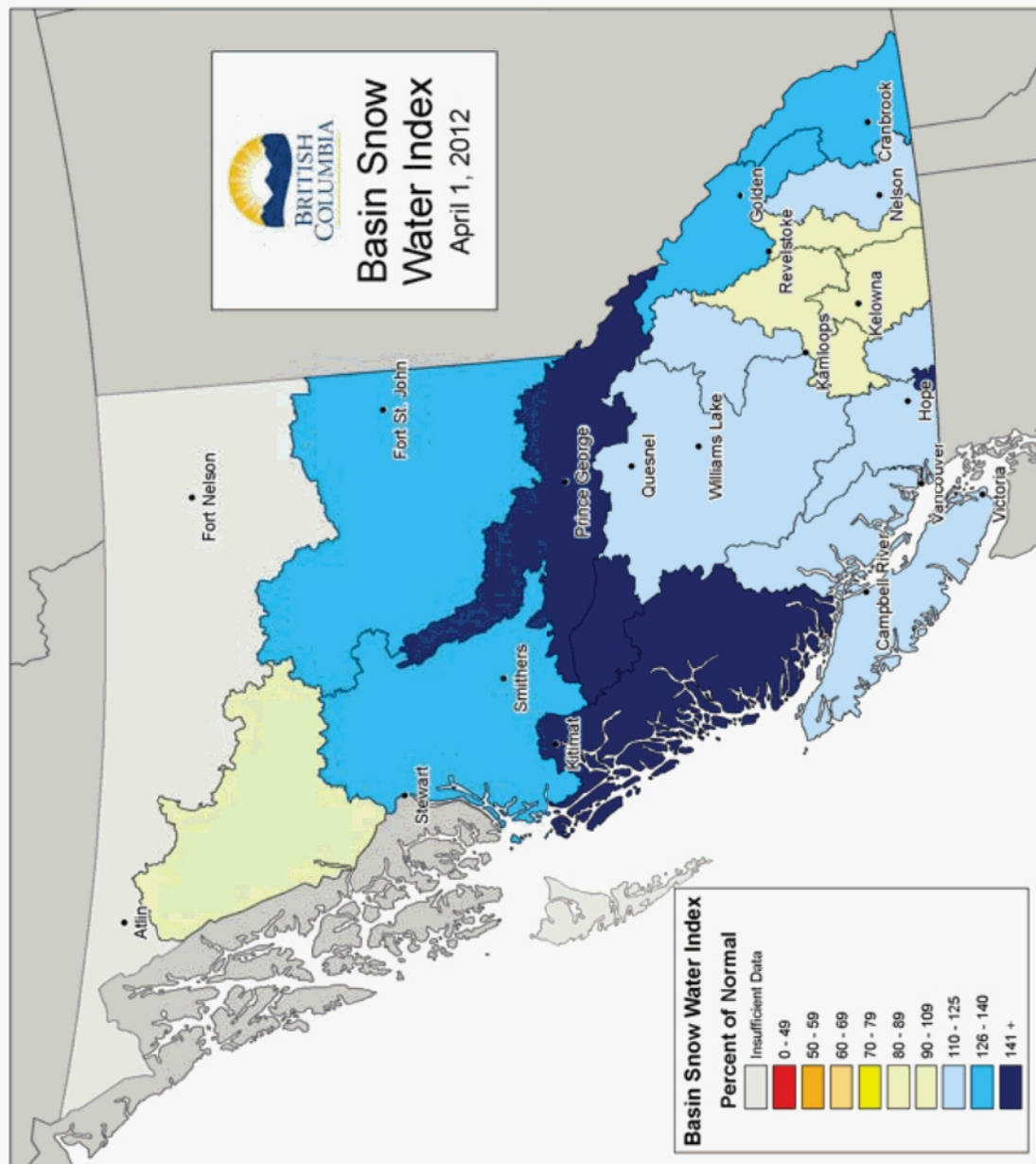




Ministry of
Forests, Lands and
Natural Resource Operations

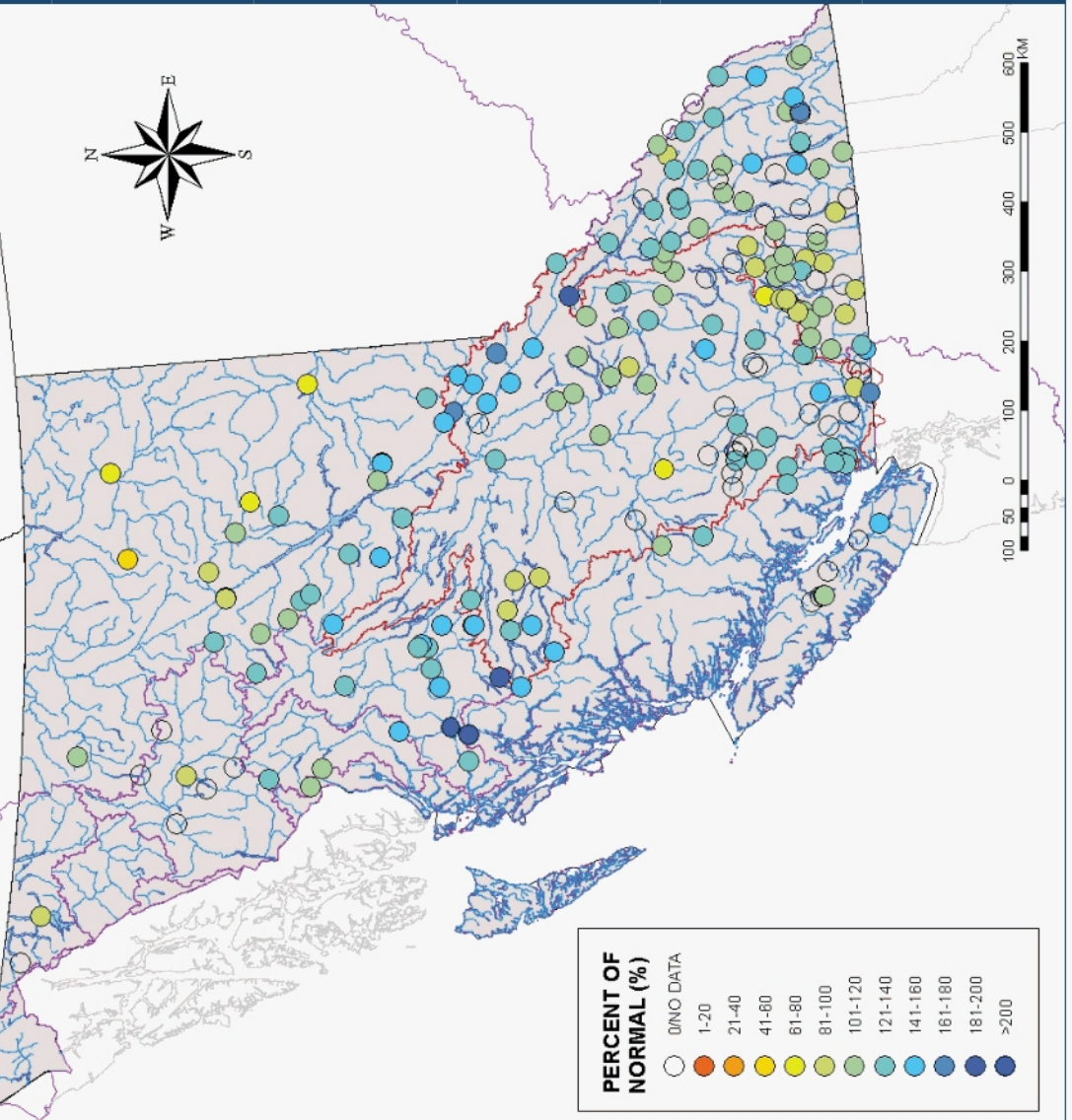
RIVER FORECAST CENTRE



April 1st 2012 – Snow Basin Indices

	<u>2012</u>	<u>2011</u>	<u>2007</u>		<u>2012</u>	<u>2011</u>	<u>2007</u>
Upper Fraser	152%	105%	139%	Kootenay	127%	110%	105%
Nechako	165%	105%	159%	Okanagan-Kettle	104%	107%	94%
Middle Fraser	112 %	105%	130%	Similkameen	110 %	101%	100%
Lower Fraser	125%	131%	124%	South Coast	121%	133%	127%
N. Thompson	112%	95%	116%	Van. Island	124 %	153%	123%
S. Thompson	106%	111%	109%	Peace	129%	99%	146%
Columbia	125%	101%	124%	Skeena-Nass	138%	102%	151%
FRASER BASIN	131%	115%	131%				

SNOW WATER EQUIVALENT (2012/04/01)



Rosche, Kimberly FLNR:EX

From: Filmer, Cam A TRAN:EX
Sent: Friday, April 20, 2012 12:45 PM
To: Duffy, Chris D EMBC:EX; Norgaard, Aja V JAG:EX; Curtis, David FIN:EX; Lewis, Cameron F ENV:EX; Nyland, Dirk TRAN:EX; Davidson, Glen W FLNR:EX; Symonds, Brian FLNR:EX; Knox, Graham G ENV:EX; Peters, Neil J FLNR:EX; Nickel, Ken AGRI:EX; Carby, Shawn W HLTH:EX; Rothe, Karen J EMBC:EX; Gleeson, Kelly T GCPE:EX; Loski, Carol FLNR:EX; McCaffrey, Julianne GCPE:EX; Gilday, Kelly JAG:EX; Denlinger, Becky EMBC:EX
Subject: RE: Core CCG Flood call

FYI

Please find attached some items for discussion for the core CCG call

First attachment is a list of possible action items (some may have been actioned already) based on previous planning for freshets. The second is Advanced Planning items from 2011 – some have been now completed, but will still provide some good background/items to consider.

Have also included the final draft BC Flood Response Plan – which details the roles and responsibilities of key players – it should also provide a good place for cross confirmation.

Suggest we confirm whether each item is of value, and if so, who will coordinate that item or has already been doing so.

Regards,

Cam



-----Original Appointment-----

From: Duffy, Chris D JAG:EX
Sent: Friday, April 20, 2012 8:45 AM
To: Duffy, Chris D JAG:EX; Filmer, Cam A JAG:EX; Norgaard, Aja V JAG:EX; Curtis, David JAG:EX; Lewis, Cameron F JAG:EX; Nyland, Dirk TRAN:EX; Davidson, Glen W FLNR:EX; Symonds, Brian FLNR:EX; Knox, Graham ENV:EX; Peters, Neil J FLNR:EX; Nickel, Ken AGRI:EX; Carby, Shawn W HLTH:EX; Rothe, Karen J CSCD:EX; Gleeson, Kelly T GCPE:EX; Loski, Carol JAG:EX; McCaffrey, Julianne GCPE:EX; Gilday, Kelly JAG:EX; Denlinger, Becky JAG:EX
Subject: Core CCG Flood call
When: Friday, April 20, 2012 13:00-13:45 (GMT-08:00) Pacific Time (US & Canada).
Where: conf call 877-353-1984 s.17
Importance: High

When: Friday, April 20, 2012 13:00-13:45 (GMT-08:00) Pacific Time (US & Canada).

Where: conf call 877-353-1984 s.17

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

Hi folks

We'd like to convene a Core CCG call to discuss urgent flood preparedness matters to come together on.

Please join at 13:00

Dial: 877-353-1984

s.17

Will Jolley (Dam Safety)

PROVINCE OF BRITISH COLUMBIA

The British Columbia Flood Response Plan

2012

Emergency Management BC
4/18/2012

Ministry of Justice

Dated Signed

Ministry of Transportation and Infrastructure

Dated Signed

Ministry of Environment

Dated Signed

Ministry of Forests, Lands and Natural
Resource Operations

Dated Signed

Ministry of Community, Sport and Cultural
Development

Date Signed

Amendments

DRAFT

The British Columbia Flood Response Plan 2012

Purpose

The British Columbia (BC) Flood Response Plan 2012 describes the methodology the provincial government will utilize for coordinating activities to manage a flood event including clarifying the roles and responsibilities of the ministries involved in flood management during an integrated provincial response event. It sets out a concept of operations that fosters collaboration among multiple organizations active in managing the consequences of a flood emergency.

Scope

The plan focuses on readiness and response activities of the provincial government at the regional and provincial level. Minor flood incidents that do not require multi-jurisdictional or multi-agency response are not discussed. Local authority flood response activities and financial issues including Disaster Financial Assistance (DFA) are also outside of scope for this document. The mitigation and recovery pillars of emergency management are not discussed in this plan.

Background

Communities in BC can experience flooding throughout the year. Within BC emergency flood response is managed primarily by local authorities. Please refer to Appendix 1 for a brief overview on local authority flood response activities. As required, the provincial emergency management system will activate to support local authorities.

Floods are caused by natural or human-made conditions and geography. Communities might experience flooding due to:

- Heavy rains or rain-on-snow events in fall/winter months;
- Spring freshet flooding from rapid snow melt;
- Intense precipitation at any time of the year;
- Ice jams;
- Reservoir releases;
- Failure of dams or flood protection works;
- Coastal flooding from high tides, storm surge and waves; and
- Debris flows on the fans of steep mountain stream channels.

Freshet is the period of time when rivers swell from snowmelt, generally April to July. Freshet flooding occurs when atmospheric conditions lead to rapid snow melt and normal stream channels become overwhelmed. The potential for freshet flooding can generally be forecasted using information related to snow packs, weather forecast and knowledge of stream channel capacities. While snowpack information can be used to begin planning in advance of a potential flood event, actual flood severity is dependent on short term weather conditions.

Localized weather conditions, such as rain-on-snow, or intense rain events are even less predictable and do not provide significant advanced warning. Physical failure of flood protection works or human-made dams have potential for flooding and are generally unpredictable.

Due to the unpredictable nature of floods, response activities generally require cross-government provincial coordination and collaboration. Enhanced readiness and response activities require the assistance of all stakeholders in the BC Flood Plan. This plan is a living document that represents an agreement between various ministries and agencies of the provincial government.

This document fits as a component of the provincial Comprehensive Emergency Management Plan and aligns with the BC Emergency Response Management System (BCERMS). Please refer to the Comprehensive Emergency Management Plan (CEMP) All-Hazard Plan for a detailed outline of the operational structure and responsibilities for a Provincial coordinated all-hazard response.

This plan replaces all previous versions, including the BC Flood Plan 2008 Edition.

Specific Risks and Considerations Associated with Flood Events

- Catastrophic or flash flooding can be extremely hazardous and pose a significant risk to infrastructure and potential loss of life;
- Flooding can cover a large geographic area, or occur in numerous locations concurrently, which can overwhelm local and provincial resources;
- Health risks can occur due to compromised sewage systems or contaminated drinking water supplies;
- Forecasting for freshet flooding can allow for advanced planning. Snow survey bulletin reports are released by the River Forecast Centre in January, February, March, April and May each year which can be used to identify areas with elevated risk;
- Dike authorities are required to actively monitor their flood protection works to ensure that such things as electrical connections are functional, that any gates or valves are operational and to assess dike integrity;
- Waterways must be monitored for hazardous material and debris that could cause further blockage of the normal water course;
- There may be a need to implement flood protection measures at site; and
- Overland flooding is an uninsurable event that might be eligible for coverage under DFA. If the flood event is identified as a DFA event by Emergency Management BC (EMBC), individuals, businesses and not-for-profits can then apply for financial assistance to cover eligible restoration and repair costs.

Resource Requirements

Resource requirements for provincial agencies to assist with flood response are:

- Subject matter experts to forecast and analyze river behavior;
- Flood Assessors and Observers to assess field conditions, reporting directly to the activated Provincial Regional Emergency Operation Centre (PREOC) to help inform the provincial integrated response;
- Access to geographical information systems and flood mapping;
- Aviation resources for reconnaissance, surveying and advanced planning;
- Provincial trained staff for deployment to assist local authorities with proper sandbag placement, dike and dam assessment methodology, etc.;
- Riprap provided and managed by Ministry of Transportation and Infrastructure (MoTI);
- Gabion dikes for distribution to local authorities by the province;
- Sandbags for distribution to local authorities;
- Operational and available sandbag filling machines;
- Forestry crews to assist with sandbagging; and

In exceptional flood seasons special treasury board authorization for preparedness activities and additional staff may be required.

Authorities

Local Authorities, as defined in the *Emergency Program Act*, have a legislated duty to respond first to emergency situations within their jurisdictions and to have an emergency plan in place to keep citizens, infrastructure and the community as safe as possible.

Provincial legislation, as listed below, provides the legal authority for ministries to engage in flood management activities:

Emergency Program Act details roles and responsibilities of the Province, provides parameter for declaring local or provincial emergencies and the emergency powers a declaration provides.

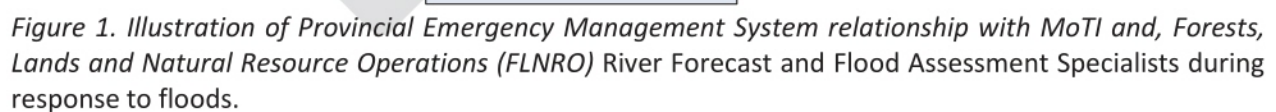
Emergency Program Management Regulation details the responsibilities and authorities of provincial ministers, ministries, programs, and government corporations and agencies.

Dike Maintenance Act details the legislative basis for operation and maintenance of public dikes in British Columbia. Other legislation relative to diking authorities in British Columbia include the *Drainage, Ditch and Dike Act* and the *Local Government Act* which allows local governments to undertake diking and drainage through local bylaws and Improvement Districts.

BC Dam Safety Regulation provides guidance on the application process as well as reporting and inspection guidelines specific to dams.

Please note that this is not an exhaustive list of the legislation that pertains to flood management activities.

The provincial flood response activities follow the BCERMS as outlined in the EMBC All-Hazard Plan. The following section outlines the operational centres and the relationship of flood response agencies.



The Ministers-Deputies Emergency Committee (M-DEC) is composed of the key ministers and deputies who provide direction, policy and strategic guidance to the CCG Central Coordination Group (CCG) for flood emergency events. The Ministry representation on the M-DEC generally mirrors the participant list in the CCG.

Central Coordination Group

During major or complex flood events the core CCG will be activated. The CCG is co-chaired by EMBC and the MoTI. Where potential freshet flooding based on snow-pillow and weather reports is forecasted, the CCG will meet in prior to freshet to initiate advanced planning.

The CCG will provide policy and direction regarding the integrated provincial emergency flood management activities in support of provincial agencies and local authorities.

The CCG role is to:

- Evaluate the situation and assess the provincial government involvement;
- Provide strategic and policy direction to the Provincial Emergency Coordination Centre (PECC);
- Determine the need to activate the M-DEC;
- Oversee the implementation of cross ministry communications; and
- Brief senior government officials on the flood threat, flood preparation, response and recovery activities on a regular basis.

In addition, when required the CCG will make situation specific decisions based on recommendations and options provided by the Issues Management Group (IMG) who activate to assist in more complex emergencies and disasters.

The CCG is generally activated by the onset of flooding or by one of the co-chairs based on flood potential, or flood forecasts.

The suggested makeup of the CCG for flood events is as follows:

- Ministry of Justice, EMBC (co-chair);
- Ministry of Transportation and Infrastructure, (co-chair);
- Ministry of Forests, Lands Natural Resource Operations;
- Ministry of Health;
- Government Communications and Public Engagement;
- Ministry of Agriculture; and
- Ministry of Environment.

During the course of flood response other federal agencies, such as Public Safety Canada (PS) and Aboriginal Affairs and Northern Development Canada (AANDC) may be represented. Depending on response requirements, additional organizations or provincial agencies may be invited to participate in the CCG.

Each Ministry will designate a senior representative (Executive Director/ Assistant Deputy Minister (ADM) level) and one alternate to represent them on the CCG. Each representative will report to the CCG on the response and readiness activities of the respective ministry. This would include reporting out on major incidents impact response capability as well status of readiness preparation.

Issues Management Group

During any significant event, there may be situations that require extraordinary measures to resolve issues that extend beyond normal emergency management activities. While the CCG has decision support systems in place to deal with normal and above normal flood seasons there are complex situations where engaging additional provincial-level decision making support and expertise from key

government ministries and agencies is required. The IMG will address specific complex flood management issues as they may arise.

The IMG will provide decision making support to government, through the CCG when active, on complex incidents involving cross government coordination. The IMG will assist the CCG with:

- Providing options for the resolution of complex emergency management issues;
- Obtaining legal opinions pertaining to complex emergency management issues;
- Maintaining a corporate library of case studies;
- Coordinating and collaborating with any required subject matter experts;
- Ensuring that each ministry is adequately represented;
- Determining other issue-specific participation in the group; and
- Reporting out to appropriate ministry executive, CCG (when appropriate) and Interagency Emergency Preparedness Council (IEPC).

Ministry of Transportation and Infrastructure MROCs and DOCs

In major events the MoTI may activate a combination of District Operation Centres (DOC, site-support level) and Ministry Regional Operation Centres (MROCs, regional coordination level) to manage the response to flooding on provincial highways and provide support for PREOC activities. Operations are coordinated through the MoTI radio system utilizing a central radio room (PHCC). If required MoTI subject matter experts may be deployed to any of the EMBC operation centres and with staff typically located in the operations section.

Provincial Emergency Coordination Centre

As per the All-Hazard Plan, the PECC located in Victoria, will implement CCG priorities and support active PREOCs. Provincial technical specialists from the River Forecast Centre and Dam Safety Branch of the Ministry of FLNRO work in collaboration with the planning and operations sections in the PECC.

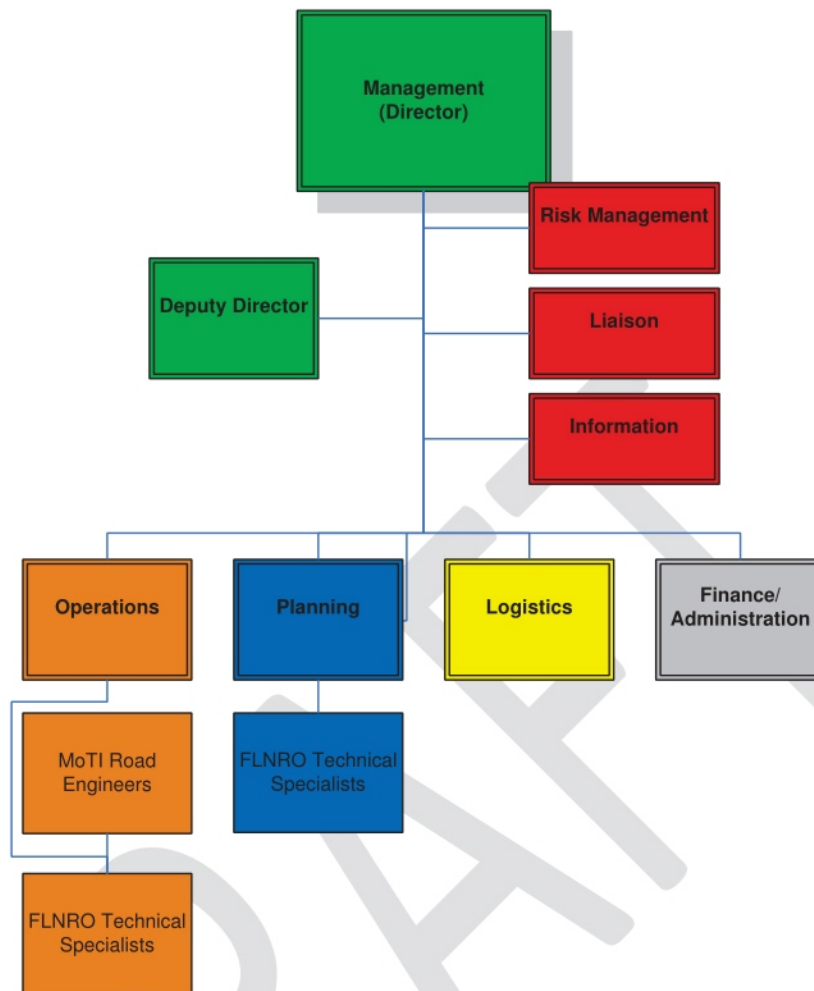


Figure 2. Illustration of the potential placement of the MoTI and FLNRO representatives within the EMBC operational organization structure.

Provincial Regional Emergency Operation Centre (PREOC)

As per BCERMS, a PREOC provides support to affected local authorities. Technical expertise from the River Forecast Centre, Water Stewardship Branch, FLNRO Regional Operations and Environment Canada, are the most commonly placed into the planning section of the PREOC.

At the PREOC level different types of services and subject matter expertise are provided by ministries supporting both provincial and regional response activities.

Site Level

Provincial technical specialists may be deployed to the site to assist local authorities with technical services including dike assessments and hazard mitigation. Provincial staff may also provide situational awareness. The deployment of provincial staff is dependent on the prevalent situation.

Flood Emergency Management Overview

Readiness

The Province, through FLNRO, monitors river levels, provides flood forecasts and bulletins (River Forecast Centre) as necessary through the spring-summer and fall-winter flood windows and provides oversight to dam and dike owners. During the snow accumulation season (January to May), the River Forecast Centre issues monthly snow survey and water supply bulletins which assess seasonal flood risk and identify areas of the province that may be subject to increased risk due to heavy snow pack. Typically the April 1st snow bulletin provides the best outlook for seasonal flood risk for freshet, but in years with very high snow pack, earlier snow surveys (February 1st or March 1st) may be used to identify increased risk. While snow pack is an important element of seasonal flood risk, flooding can occur during years with or without high snow packs. During readiness for a predicted forecast extreme flood threat, the province provides strategic recommendations to local authorities and engages in flood preparedness activities. The level of flooding risk influences the type and amount of preparedness activities carried out by the Province.

The CCG may meet to establish priorities on readiness activities. The IMG may meet to assist the CCG with specific complex flood issues. EMBC Advanced Planning will begin planning to support all flood response efforts throughout the province.

Where there is a possibility of an extreme flood event, the level of readiness will dictate the need to establish cross-government working groups such as agricultural, transportation including mass evacuation, government services continuity, community recovery, health, critical infrastructure, and mapping. EMBC will also explore the possibility of establishing a provincial call centre if required.

During the readiness stage local authorities, the EMBC regional manager and representatives of FLNRO and the MoTI may begin work on an integrated Regional Flood Response Plan that details what jurisdictional activities are or will be undertaken for preparedness, response and recovery within the region by all agencies. The Regional Flood Response Plan will be developed well in advance of any potential flooding activities to maximize resources and to ensure coordinated approach to potential flood events.

EMBC regional managers will reach out to the local governments and offer assistance with flood readiness or activities. Seasonal preparedness workshops may be delivered to assist local governments with preparing for flood activities.

Advisories from the River Forecast Centre

The River Forecast Centre uses three levels of advisories. They are as follows:

1. **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.
2. **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.
3. **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.

In general, during a flood event the advisories sequence through all three levels, beginning with a High Streamflow Advisory, but in certain circumstances the first notification for an event may be a Flood Watch. The timing of the warnings before a flood event can vary from a few hours to about 72 hours. The River Forecast Centre distributes these warnings to key stakeholders. In situations where there is some advance warning (>72 hours) of the potential for flood-producing weather systems, the River

Forecast Centre may alert EMBC (stakeholders) of these conditions prior to releasing an advisory or warning.

Response

River Forecast Centre

Emergency response activities will escalate depending on the River Forecast Centre notifications.

High Streamflow Advisory Response

Special resources may be pre-positioned and public media bulletins prepared in advance. The PREOC may activate to help coordinate regional planning and preparations. The PECC may follow suit to coordinate and integrate provincial activities.

During a High Streamflow Advisory a local authority may consider assigning a flood observer/assessor to identify and monitor any sites at risk. Diking authorities should actively monitor their flood protection works to ensure that all connections are functional and any gates or valves are operational and clear.

Public information on flood-proofing homes, businesses and threatened infrastructure as well as public safety advisories will be issued by the local authority EOCs, PREOCs or PECC. Local authority EOCs should create opportunities such as public meetings, local bulletin board postings or local newsprint articles to provide flood safety awareness to citizens and explain flood response plans.

Evacuation plans should be updated by the local authority, as necessary, for potentially affected areas.

Flood Watch Response

Local authorities and diking authorities should proactively patrol river banks on a priority basis and as conditions dictate. This should include all dikes or other flood protection works and should specifically observe for the appearance of instability or deficiencies. Dam owners should increase the monitoring of their structures and ensure that spillways are clear and the structure(s) are in working order. FLNRO staff may assist local authorities with river assessments. MoTI will provide the primary monitoring where any highway infrastructure may be at risk.

Flood Warning Response

Flood Warnings indicate there is a high probability of damage due to flooding. The range of provincial response can vary dramatically depending on the severity of the event. Full flood response or control programs are implemented due to the potential severity of flooding.

Mandatory evacuation is contemplated or ordered. Provincial resources will continue to monitor and assess flooding events.

When the river stage (water height) is expected to reach or exceed stream channel capacity or when flooding is actively occurring emergency response activities are initiated. EOCs, PREOCs and the PECC will be activated with staffing levels and operational hours that reflect the level of response required.

Response Involving First Nations

AANDC holds legislated responsibility for emergency management on federally designated First Nations reserves. Through a Letter of Understanding with AANDC, EMBC has agreed to support the provision of emergency response and recovery services to First Nations communities when requested by either AANDC or the local Band Council.

EMBC is specifically named as the provincial agency to be involved with any requirement to respond to flood conditions on (or involving) reserve lands. As a result, the PECC must be informed as soon as reasonably possible. A separate task number will be issued for the incident to facilitate cost recovery from the federal government.

EMBC will support, assist or arrange for such required emergency measures as seen under existing protocol arrangements with AANDC. This may include coordinating volunteer, municipal, provincial, federal and other agency support.

Recovery

Recovery refers to activities and programs designed to return a situation to an acceptable pre-emergency condition. Recovery activities can be carried out at the local, regional or provincial level as is required by the complexity of the flood event.

When the threat of continued flooding has passed, evacuees may return to the area once the evacuation order has been lifted. Outstanding issues such as denying building occupancy, due to electrical problems or drinking water contamination may persist; however, people may proceed with cleanup activities.

This stage may also be characterized by the implementation of demobilization plans and recovery activities. EOCs, PREOCs and the PECC may reduce their activation levels to support recovery activities.

Overland flooding is not insurable in BC for homeowners. If an event is determined eligible for DFA, EMBC supports recovery efforts through the administration of the DFA program. Incremental costs for a local authority's Recovery Centre under Community Disaster Recovery are administered under DFA program. Refer to the EMBC website for further details on the DFA program.

Lead Provincial Agency Roles and Responsibilities

Flood management requires an integrated provincial response. All provincial ministries must collaboratively work with all emergency management stakeholders to assist local authorities with effectively managing flood events. Provincial ministries must ensure internal communication within each ministry is unified and that all staff involved in flood management activities receives appropriate training/orientation for the activity that they are involved in. This section highlights the primary ministries responsible for flood management. There are five primary ministries involved in the support of flood response. These are:

Ministry of Justice, Emergency Management British Columbia (EMBC)

EMBC has the primary responsibility for coordinating the provincial emergency management structure. EMBC will activate PREOCs and the PECC to coordinate and implement the provincial response and provide support to local government response efforts. EMBC will also support recovery efforts through the administration of the DFA program. When required, EMBC will activate the CCG and serve as co-chair.

In the readiness phase, EMBC will:

Provincial
<ul style="list-style-type: none"> • Ensure flood resource contact list is updated; • Ensure ready status of provincial stockpiles of sandbags and gabion systems; • Review central sandbag inventory and alignment to local authority needs; • Update Temporary Emergency Assignment Management System (TEAMS) roster based on flood needs; • Update public education and awareness information material if required in collaboration with

GCPE;
<ul style="list-style-type: none"> • Establish seasonal flood readiness sessions;
<ul style="list-style-type: none"> • Develop a communications strategy and tie it to seasonal readiness; and
<ul style="list-style-type: none"> • Review and amend the current BC Flood Response Plan 2012.

EMBC supports and publishes public information response pamphlets regarding flood-proofing your home and clean up measures on its website.

Response

In addition to the activities listed in the All-Hazard Plan, activities of the PECC specific to flood events include:

Provincial
<ul style="list-style-type: none"> • Distribute River Forecast Centre advisories to appropriate staff and stakeholders;
<ul style="list-style-type: none"> • Provide public flood safety information and distribute to media;
<ul style="list-style-type: none"> • Deploy sandbags, gabion baskets and regional resources from the provincial stockpile to local governments as requested;
<ul style="list-style-type: none"> • Coordinate the preparation of provincial flood response directives;
<ul style="list-style-type: none"> • Activate TEAMS roster based on flood needs;
<ul style="list-style-type: none"> • Coordinate with AANDC regarding First Nations communities;
<ul style="list-style-type: none"> • Approve event eligibility for DFA and administer the DFA Program for individuals, local authorities and businesses; and
<ul style="list-style-type: none"> • In a DFA event, deploy program staff to local communities to participate in information sessions and community meetings.

In addition to the activities listed in the All-Hazard Plan, the PREOC activities specific to flood events include:

Regional
<ul style="list-style-type: none"> • Host briefings with key stakeholders as required;
<ul style="list-style-type: none"> • Notify local authorities that are potentially affected according to RFC forecasts;
<ul style="list-style-type: none"> • Activate TEAMS roster based on flood needs;
<ul style="list-style-type: none"> • Liaise with local authorities, First Nations communities and ministry representatives about potential consequences related to flooding;
<ul style="list-style-type: none"> • Manage and deploy sandbag filling machines;
<ul style="list-style-type: none"> • Ensure proper safety measures are in place for technical specialists deployed to assist local authorities at the site;
<ul style="list-style-type: none"> • Attend town hall meetings;
<ul style="list-style-type: none"> • Assess requirement for DFA; and
<ul style="list-style-type: none"> • Provide public information materials to local authorities about health issues, cleanup, DFA and other resources available to help those who have been impacted and need additional assistance.

Ministry of Transportation and Infrastructure (MoTI)

MoTI will provide expertise and resources, as required. MoTI will also remain responsible for the safety and protection of provincial public highway road and bridge infrastructure. Ministry representatives may deploy staff to the PREOC, PECC or local EOC(s) and co-chair the CCG.

During flood response MoTI responds to floods impacting provincial highway infrastructure. Associated activities include:

Provincial
<ul style="list-style-type: none">• Provide technical advice and specialist expertise, support services and staff as required;• Provide representatives to the PECC, PREOC and site as required;• Assign a senior representative to the CCG;• Clear culverts to ensure appropriate runoff during flood season;• Increase inspection patrols and maintenance as required;• Forward additional equipment and resource requirement requests to the PECC or PREOC; and• Issue regional priorities for flood response tasks based upon directives issued by the CCG.
Regional
<ul style="list-style-type: none">• Participate in the development of the Regional Flood Response Plan, a process led by local government emergency coordinators;• Identifying and supply equipment and other resources such as riprap within the region(s);• When requested by PREOC supply heavy equipment, construction materials and/or contract equipment and operators; and• Complete emergency highway and bridge infrastructure work.

Ministry of Forests, Lands and Natural Resource Operations (FLNRO)

FLNRO will provide expertise and resources at the readiness, response and recovery phases, as required. This may be in the form of flood forecasting, professional or technical services and assessments, planning, logistics support (e.g., air support, water pumps, hoses), and supply of field personnel. FLNRO will also remain responsible for the safety and maintenance of forest service roads (FSR) network. In addition, the Ministry may deploy staff to the PREOC, PECC or local EOC(s).

Provincial operations include Water Management, Water Stewardship, Engineering, and Wildfire Management Branches. Regional Operations includes field operations at the regional and district levels. Water Management Branch includes the Flood Safety, River Forecast Centre (RFC), Dam Safety Sections; and Water Stewardship Branch provides liaison and oversight with regional operations.

Water Management Branch
Provincial
<ul style="list-style-type: none">• Provide technical advice and specialist expertise, support services and staff as required;• Provide representatives to the PECC, PREOC and site as required;• Assign a senior representative to the CCG;• Monitor river levels;• Conduct regular snow surveys through the River Forecast Centre;• Provide flood forecasts and bulletins;• Provide regular updates of snow conditions;• Liaise with Environment Canada regarding weather forecasts;

<ul style="list-style-type: none"> • Provide oversight to dam and dike owners; • Undertake modeling to support flood level forecasts; • Contribute to provincial planning efforts; • Provide provincial coordination of ministry resources; and • Provide training of ministry and other staff.
Wildfire Management Branch
<ul style="list-style-type: none"> • Supply fire crews for sandbagging when available for deployment; and • Provide resource, communications and logistical support, including: <ul style="list-style-type: none"> ○ Air support ○ Water pumps, hoses and hand tools ○ Warehousing services ○ Transportation of materials ○ Portable camps ○ Communication services ○ Response personnel.
Engineering Branch (Coast, Southern, Northern Engineering Groups),
<ul style="list-style-type: none"> • Supply professional engineering and technical services support, including: <ul style="list-style-type: none"> ○ Geotechnical or hydrological site hazard assessments ○ Structural site hazard assessments during provincial response to floods.
Regional Operations
<ul style="list-style-type: none"> • Provide technical services and recommend strategies to PREOC on flood assessment and response, including drinking water source identification and protection; • Identify and deploy field level flood assessment and observation providers for the PREOC; • Liaise with dam owners and dike authorities; • Conduct dam assessments; • Provide technical support services and staff on a 24-hour basis to PREOC, as requested; • Provide local stream forecasts and information; • Provide advice and recommend strategies to site, EOC, PREOC, PECC regarding orphan dikes; and • Provide recovery plans for protection works, as required.

Ministry of Environment (MoE)

During provincial response to floods the main supporting role of the MoE is to address hazardous material and other threats to the environment. MoE liaises with Environment Canada and other federal agencies as required and provides direction and leadership regarding waste and flood debris management issues that arise. In addition, ministry representatives may staff the PREOC, PECC or local EOC(s). The MoE will participate as a member of the CCG as required. Associated activities include:

Provincial
<ul style="list-style-type: none"> • Provide technical advice and specialist expertise, support services and staff as required; • Provide representatives to the PECC, PREOC and site as required; • Assign a senior representative to the CCG; • Provide technical services regarding environmental risks; and • Co-ordinate the provincial snow survey program.

Regional
<ul style="list-style-type: none"> • Participate in the development of all Regional Flood Response Plans, a process led by local government emergency coordinators; • Respond to spills and potential spills resulting from flooding; • Provide expertise on waste management and disaster debris issues resulting from flooding; • Provide information on spill prevention for floods; • Provide technical assessment and direction on imminent spill risks; and • Provide trained flood observers to assist in the establishment and monitoring of flood gauges.

Government Communications and Public Engagement (GCPE)

GCPE has the primary responsibility to implement the provincial communications strategy once the provincial emergency management structure is activated. GCPE provides information officers to the PREOCs, the PECC and to local EOCs as needed to provide expertise in media relations and public information activities. The GCPE will participate as a member of the CCG. Associated activities include:

Provincial
<ul style="list-style-type: none"> • Prepare to implement the province's Crisis Communications Strategy for Major Provincial Emergencies and ensure readiness of TEAMS information officers; • Brief senior government officials on communications issues; • Assign a senior representative to the core CCG; • Assign TEAMS Information Officers to the PECC and each regional PREOC, as requested by the PECC, and where necessary, to local authorities EOCs; and • Implement the BC Crisis Communications Strategy for Major Provincial Emergencies.

Supporting Provincial Agencies Roles and Responsibilities

Ministry of Health

During provincial response to floods the main supporting role of the Ministry of Health is to support regional health authorities to ensure the continuity of health services and monitoring and managing Public Health impacts. If the situation becomes severe, the ministry may activate its Health Emergency Coordination Centre (HECC) in Victoria, in support and coordination of the health sector response.

Provincial
<ul style="list-style-type: none"> • Assign a senior representative to the CCG; • Provide a representative to the PECC; • Activate the Health Emergency Management structure as needed; • Provide leadership and direction on Public Health issues related to flooding; and • Provide Provincial Disaster Psychosocial support as needed.
Regional
<ul style="list-style-type: none"> • Through health authorities and other health agencies, provide a representative to the PREOC(s); • Activate Local and Regional Health Emergency Management Structures as needed; • Provide sewage disposal expertise; • Provide drinking water quality expertise; and • Manage and coordinate the evacuation of health facilities as required.

Ministry of Agriculture

During provincial response to floods the main supporting role of the Ministry of Agriculture is to facilitate the relocation of livestock and provide support to the agricultural industry. If the situation becomes severe, the ministry may activate its ministry operation centre (MOC) in Abbotsford. If there is a threat of flooding in the lower Fraser Valley, due to heavily concentrated dairy farm industry in high risk areas, it is likely that Ministry of Agriculture will perform significant advanced planning and readiness activities. During provincial response to floods the Ministry of Agriculture will:

Provincial
Provide coordination of the evacuation of livestock and their care, including emergency feeding; and
Provide advice on the protection of livestock and the coordination for disposal of livestock carcasses.

Ministry of Community, Sport and Cultural Development (CSCD)

The Ministry of CSCD provides programs and services related to local governments, including the legislative, policy and governance framework for local governments. The Ministry provides funding, advice, and other supports to foster effective local government services, infrastructure, and governance structures. During provincial response to floods the Ministry of Community, Sport and Cultural Development will:

Provincial
<ul style="list-style-type: none">• Provide guidance and assistance to local governments regarding infrastructure; and• After situation assessment, may approve special operating authority/funds for local governments (in an emergency event).

Response Roles of Key External Agencies

Dike Authorities and Dam Owners

Dike Authorities should proactively patrol dike banks on a priority basis and as conditions dictate. This should include all dikes or other flood protection works and should specifically include observations for the appearance of instability or deficiencies. Dam owners should increase the monitoring of their structures and ensure that spillways are clear and all support structure(s) are in working order.

Fisheries and Oceans Canada

During flooding events Fisheries Oceans Canada, through coordination with Public Safety Canada, would assist the province by providing additional resources, such as pumps and boats.

Agriculture and Agri-Food Canada (AAFC)

Under the National Disaster Assistance Framework, AAFC would assist BC in securing safe food and water, spare parts and fuel for producers and key ingredients for processors. AAFC would work in coordination with Public Safety Canada to seek alternate means of transport if the province requests assistance during flood events.

Authoritative Sources of Information

The following sources of information are valid for use in the development of situation reports and gaining situational awareness.

- Drive BC: www.drivebc.ca
- Emergency Info BC: <http://www.emergencyinfobc.gov.bc.ca/>
- River Forecast Centre: <http://bcrfc.env.gov.bc.ca/>
- Environment Canada: http://www.weatheroffice.gc.ca/canada_e.html
- For information on DFA: http://www.pep.bc.ca/dfa_claims/dfa.html
- Water quality advisories are posted on Health Authority websites.

Appendix A

Local Authority Flood Response Activities

Local authorities include municipalities and regional districts. Local authorities hold primary responsibility for emergency management within their jurisdiction. According to the *Emergency Program Act* (EPA) local authorities must establish an emergency management organization to develop and implement emergency plans and other preparedness, response and recovery measures.

Elected officials are responsible for supporting, funding, and approving the local emergency plan. The local emergency plan is maintained and updated by a coordinator (often called the Emergency Program Coordinator) and should be reviewed annually. This emergency plan:

- Provides the overview of the community's response organization and policies;
- Establishes the overall authority for conducting emergency operations;
- Describes the hazards that the plan intends to address; and
- Assigns responsibility for emergency planning and operations.

A current and detailed local emergency plan ensures that the community is prepared to take immediate action in the event of an emergency.

Emergency preparedness involves as much pre-planning as possible and the designation of a variety of emergency facilities can enhance response logistics when an emergency occurs. An Emergency Operation Center (EOC) is a central location where response personnel can coordinate and make decisions in support of activities required at the site of an emergency. The EOC integrates personnel, procedures, communications and equipment into a common system with responsibility for coordinating an emergency event. In larger flood events, neighbouring local authorities may choose to run a joint emergency operation centre.

The range of local authority response can vary dramatically depending on the severity of a flooding event and the resources available within the local authority. During flooding events, the local authority, in accordance with its emergency plan(s) may, in varying order:

- Identify and monitor any sites at risk;
- Make any preparations necessary, including completing outstanding mitigation work;
- Provide the public with flood safety information and pre-determined local response information; and
- Implement flood protection measures.

At the onset of flooding, a detailed log of damages, with photographs, should be initiated. This will help validate and maximize any financial assistance claim submissions. As well the local authority should:

- Activate emergency plans;
- Activate their EOC;
- Notify the PREOC of local emergency response activities;

- Prepare a situation report and distribute to the PREOC and other appropriate agencies or EOCs on a regular basis;
- Issue evacuation notices and, coordinate evacuations as necessary;
- Establish local call centres for public inquiries as necessary; and
- Provide post-flood information about health issues, cleanup, etc.

If the local authority requires access to the emergency powers in the *EPA*, including the ability to evacuate its citizens, a state of local emergency should be declared. The process by which a state of local emergency is declared and used is outlined in the publication, Declaring a State of Local Emergency in BC which is available on the EMBC website.

The *Compensation and Disaster Financial Assistance Regulation* of the *EPA* sets out the local authority emergency response costs that are eligible for reimbursement from the province. Local authorities are encouraged to work with EMBC to assess what costs are eligible and the appropriate procedures for submitting a claim.¹

For any provincial assistance with emergency management activities, local authorities should contact their EMBC regional office.

¹ Eligible costs include but not limited to emergency social services for people displaced from their homes, emergency operations centre costs, and even site security for evacuated homes. EMBC will provide local government 100% support for costs in relation to response to an emergency, and up to 80% for recovery activities from an event if DFA is approved.

Central Coordination Group (CCG)
Provincial Emergency Coordination Centre (PECC)
Draft Checklist for Spring Freshet 2012
April 17, 2012

Governance – Senior Officials Concept of Operations

- ☐ Possible Cabinet briefing (even as info item) – EMBC / FLNR / RFC / MoTI / GCPE
- ☐ Confirm MDEC requirements
 - Possible Deputy to Premier Letter to DMs (1999 and 2007 – others hazards as required). Includes risk, and availability of TEAMS members and other government resources
 - Possible MDEC briefing
- ☐ Confirm CCG frequency
 - Possible full IEPC / cross government CCG briefing
 - Full inclusion of federal government on CCG
 - Use of Core CCG meeting

MoTI

- ☐ Ongoing calls as required co-chaired with EMBC (includes RFC and EMBC) – both centrally and regionally

FLNR

- ☐ Confirmation of ongoing risk communications via River Forecast Centre (RFC)
 - Require communities at risk, not just watersheds
 - Needs to be factored in with new river modelling, and also new mitigation works (see comment below)
- ☐ Confirmation of flood threat messaging and communications– possible joint requirements (risk and public safety messaging)
- ☐ Snow survey analysis as required, including fly-overs of snowpack
- ☐ Status Dam Safety Branch and inspections
- ☐ Confirmation of capacity, including 24/7 ability and in many cases outreach to local governments and agency representatives both centrally and regionally:
 - River Forecast Centre (RFC)
 - Water Management field staff

Communications – External (additional)

- ☐ Integration of public safety messaging (stay away from fast moving waters)
 - number of drownings in 2007 even with massive messaging on this)
- ☐ Readiness for joint RFC and PECC / PREOC media messaging and interviews
- ☐ Completion of a Communications Plan
 - Confirmation as to Social Media aspects
 - Confirmation as to website mechanics (real-time versus ongoing)

- ☐ Readiness by the Province of what preparedness measures are in place – including outreach sessions, sandbag and gabions readiness, and also diking works done to date in areas at risk (was an issue in 2006 in Grand Forks)
- ☐ Readiness of BC Flood Information Call Centre
 - Confirmation of SOPS, capacity and capability

Urgent Mitigative Works and Mitigation Measures

- ☐ Dike/Flood Protection
 - Confirmation that no urgent works need to occur (Flood Protection Program should have alleviated)
- ☐ First Nations Mitigative Works
 - Letter to federal emergency departments for Disaster Financial Assistance Arrangement cost sharing and federal emergency preparedness (2007)
 - Confirmation that AANDC funding for mitigative works has been adequate in areas under risk and that no urgent requirement is needed
 - Review of all diking requirements to occur in integrated manner (gaps in diking systems where non-First Nations and First Nations come together) – Neil Peters area and AANDC, monitored by EMBC
 - Confirmation with FLNRO as to what impacts new flood works has on flood threat and risk
- ☐ Sandbag Distribution
 - Numbers and locations confirmed – gap analysis versus latest risk and historical use conducted by regions
 - Additional sandbags obtained and distributed or added to central stores
 - Confirm sandbag distribution aspects to First Nations with INAC and FNESS (400,000 went to Bands in 2007)
- ☐ Sandbag Filling Machine Maintenance
 - Eight sandbag machines checked by regional staff and confirmed ready to go
 - Confirmation that crews are available to use as required (i.e. Wildfire Mgt)
- ☐ Rip Rap Inventory for MOTI – updated for quantity and ownership
 - MOTI to inventory rip rap in areas under threat
 - Additional rip rap cut and costs covered as required (previously pre-authorized MOTI work covered under vote)
- ☐ MOTI to also check and confirm key highways infrastructure is protected in areas under risk (MOTI bridges and any areas of higher risk).
- ☐ Provincial Government Gabion Stockpile
 - Confirmation of gabion inventory – obtain more as required.
 - Confirmation of gabion support teams (i.e. Neil Hamilton)
 - Pre-position based on threat and as practical
- ☐ Provincial Government mitigative works for Provincial structures at risk (2007)
 - TB ruling in 2007 that costs associated with any mitigative works undertaken had to be covered by Ministry – ineligible under Vote

First Nations – Additional Items

- ☐ MARR
 - Confirmation of new regional resources – roles and responsibilities
 - Also confirmation of provincial role via MARR (i.e. New Relationships)
- ☐ FNESS

- Confirmation of capacity and roles and responsibilities
- Confirmation as to reach-out to Bands (with INAC) and updated situational awareness on areas of strength and areas of weaknesses (including Band EM aspects in areas of risk)
- ☐ AANDC
 - Confirmation of capacity and roles and responsibilities – including PECC and PREOC representation
 - Confirmation of communications methodologies and systems – including joint communications

Outreach – External Stakeholders

- ☐ Seasonal Preparedness Calls
 - All regions at risk
- ☐ Flood Preparedness Workshops (1999/2007)
 - 10 workshops occurred throughout areas at risk in 2007 – they were over subscribed
- ☐ Regional Interagency Freshet Conference Calls
 - Weekly preparation calls occurred in 2007 in areas at risk. Calls averaged 120 participants per call from local governments, local emergency volunteers, provincial ministries, agencies and private sector stakeholders.
- ☐ Freshet Readiness Support program for identified communities
 - Community outreach by EMBC regional offices as initial contact to local government emergency program officials. Followed up by complete multi disciplinary emergency management support available through regional offices in 2007 and 1999 – included staff and contractors – supported Local Governments in updating EM Plans (with most focus on evacuation planning)
- ☐ Local Government Emergency Program Coordinator (EPC) conference calls
 - Once threat became more significant, call frequency via PECC and PREOC increased in most years of risk (from daily to twice daily in some cases). Participants include regional ministry representation, elected officials, subject matter experts and other agencies
- ☐ LG Public Information Officers
 - Local Government Information Officers Toolkit – public messaging templates (2007)
- ☐ LG Public Safety Education Toolkit
 - Public Safety Education Toolkit for Local Government (2007)
- ☐ Local Government Recovery Toolkit
 - Expanded list of eligible evaluators (2007)
- ☐ Financial Guidelines
 - Financial Guidelines for Local Governments and First Nations Update (2007)
- ☐ LG Declaration Guidelines
 - Guidelines for Declaration of State of Local Emergency (2007)
- ☐ Provincial Advisories to Local Stakeholders
 - Central Coordination Group (CCG) and PREOC Flood Preparedness Advisories

Outreach – Public Education

- ☐ Flood Smart Manual (new - 2007) – I am not sure was completed – GCAPE item
- ☐ Emergency Preparedness Materials
- ☐ Translation of flood related emergency preparedness and community recovery materials (2007)
- ☐ Establish additional distribution network for public education material through Office of Fire Commissioner (OFC) – (2007)
- ☐ EMBC website enhancements
- ☐ Provincial Public Education plan completion
 - Confirmation as to resourcing

Internal Preparations

- ☐ Premier's office letter to all Provincial Ministries committing full resources of the province to EMBC (occurred 1999 / 2007 – other hazards in other years as well)
- ☐ Memo to Enhanced CCG members requesting multi disciplinary team support
- ☐ Activation of PECC Advanced Planning Unit (APU)
- ☐ Enhanced EMBC staffing levels in regional offices and headquarters
- ☐ Regular and enhanced TEAMS training in EMBC regions
 - specialized flood related training and education
 - ensure TEAMS numbers are refreshed
 - activate a PECC Government Services Branch for BCP
 - Evacuation Planning training by Justice Institute instructors
 - 3 sessions in 2007
- ☐ Disaster Financial Assistance (DFA) Manual (updated 2007)
- ☐ Activation of PECC Finance Section (2007)
- ☐ Inclusion of TB Analyst in all key CCG/PECC calls (2007 and other hazards starting mid-2000s)
- ☐ Business Continuity Advisor of EMBC engaged
 - Outreach to ministry Business Continuity Manager advisory group regarding government infrastructure risk potential
 - Tracking staff availability
- ☐ Chief Information Officer branch advised
- ☐ Emergency Management Information System confirmation of use and any mapping arrangements
- ☐ Confirmation of Critical Infrastructure (CI) Concept of Operations
- ☐ Confirmation of PSLV Readiness and Capacity (including Concept of Operations per discipline)
- ☐ Ministry of Health to detail areas and infrastructure at risk – looks at possible areas of drinking water issue
- ☐ Confirmation that BC Flood Plan not to be updated (small window here now)
- ☐ Confirm EMBC DFA surge capacity
- ☐ Confirm Provincial Government BCP aspects
 - Link in RFC with Government BCP experts
 - Develop and implement PECC GSB
 - Confirm government buildings at risk, and suggested mitigative and preparedness measures (done in conjunction with various Ministries)

Training and Education – Additional

- ☐ Refresher training of PECC / PREOC staff for functions
- ☐ Possible Swiftwater training for Forestry Crews and also SAR volunteers
- ☐ Possible Media Training for all possible spokespeople (refresher for some)
- ☐ Possible additional PSLV training as required

FLNR – Wildland Fire Management Branch

- ☐ Confirmation of Wildland Fire Management Crew Availability
- ☐ Confirmation of Provincial Air Operations capacity and role and responsibilities
- ☐ Confirmation of Logistics Support – in addition to TEAMS
- ☐ Confirmation of Camp Availability

Ministry of Agriculture

- ☐ Confirm all work that was done in 2011
- ☐ Confirm concept of Operations – both regional and centrally
 - Ministry of Agriculture ran own EOC in 2007
- ☐ Confirm PECC and PREOC Support
- ☐ Confirm financial support aspects via EMBC
- ☐ Confirm livestock relocation pre-plans and Concept of Operations

Ministry of Environment

- ☐ Confirmation of capacity

Federal Support – additional

- ☐ Confirmation by PSC of federal support aspects (including other Departments)
- ☐ Confirmation by Canada Command of available assets, including local assets in BC (i.e. the reserves in the Southwest). Major item in 2007
- ☐ Confirm RCMP capacity and Concept of Operations (i.e. moving staff around)

Central Coordination Group (CCG)
Provincial Emergency Coordination Centre (PECC)
Advanced Planning Update – June 7, 2011

#	Item	Considerations	Lead	Status
1.	Sandbag Policy Update	- Business use, FNs, removal	EMBC	Finalizing (Avril / David T)
2.	Gabions			
	- Increase in stock		EMBC	Completed
	- Ensure Technical Expertise Available		EMBC	Completed
	- Specialized Training	- Includes MOTI and MoE	EMBC / Supplier	Being Implemented
3.	BC Flood Call Centre		EMBC / Red Cross	Complete
4.	Urgent Mitigative Works Policy		FLNRO / EMBC	In Development Cameron L
5.	Critical Infrastructure Concept of Operations	- Includes PECC and PREOCs	EMBC	Completed
6.	Compensation Policies	- Includes MOTI, MoE, CSCD, AG	EMBC	In Development David C
7.	Support to AGRI			
	- Livestock Relocation Policy		AGRI / EMBC	Complete
	- Rates Sheet		AGRI	Complete
	- Financial Reimbursement	Includes Processes	AGRI / EMBC	In Development AGRI / Cam
	- AGRI Ministry EOC Activating		AGRI	Complete
	- Joint Messaging – AGRI / EMBC	- Includes Health and INAC	AGRI / EMBC	Complete
8.	PREOC / PECC Enhanced Training	- Includes new TEAMS members and online flood and swift water hazard awareness	EMBC, FLNRO, LGs	Ongoing / In Development Carol / Louise / Robert B
9.	Internal Communications Protocols and Processes		EMBC / FLNRO / Environment Canada	Ongoing
	- Briefings			
	- Enhanced Use of Visuals			
	- Situation Reports			

10.	PECC / PREOC Staffing	EMBC	Complete / Ongoing
11.	Flood Hazard Technical Expertise Support - Support to PECC / PREOCs	FLNRO	Complete / Ongoing
12.	Staffing – use of Conservation Officers	MoE / EMBC	Complete / Ongoing
13.	INAC - Share all external communication	INAC	Complete
14.	FLRNO Unit / Initial Attack Crew Capacity Check	FLNRO	Complete / Ongoing
15.	Enhanced Engagement DFO	PSC / DFO / EMBC	Complete / Ongoing
16.	Hazardous Materials Messaging	MoE / EMBC / GCPE	Pending
17.	Integrated Recovery Advisory Deployment (iRAD) - Final Sign-off - Concept of Operations - Complete Final Documentation	EMBC EMBC	Complete Pending Kelli K
18.	Local Declaration Process – Policy - Internal Communications - Extensions	EMBC EMBC	Under Review (David T) Complete

Rosche, Kimberly FLNR:EX

From: Peters, Neil J FLNR:EX
Sent: Monday, April 23, 2012 10:16 AM
To: Symonds, Brian FLNR:EX
Cc: Davidson, Glen W FLNR:EX; Mason, Wenda FLNR:EX; Campbell, David FLNR:EX; Cameron, Valerie Z FLNR:EX; Pattle, John R FLNR:EX; Berardinucci, Julia F ENV:EX
Subject: RE: Actions from April 20th CCG Core Call
Attachments: First Nations Dyke AssetList April 2012.xls

Hi Brian,
Here are my comments in response to your e-mail:

Mitigative Works:

1. Are the different mitigative works constructed in recent years considered when we do the modelling of hazards and risks? Also, have we consider recent FN mitigative works? Suggested that we may want to discuss with Carol Loski.

FLNRO is updating the hydraulic model for the gravel reach (Hope to Mission) and will be operating the full model (Hope to Steveston) to forecast water levels during the 2012 freshet. To my knowledge, all of the Flood Protection Program projects completed in the Fraser Valley over the past few years have been related to existing works and none have resulted in significant changes in channel capacity or flood storage that would need to be considered in the model.

With respect to FN mitigative works I have contacted Paula Santos at AANDC and have received a copy of AANDC's FN dike database (copy attached and link to map below). Very little on reserve work appears to have been done since 2007 in the Fraser Valley – and this work does not require additional modifications to the model.

http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-BC/STAGING/texte-text/inacmp_1100100021016_eng.pdf

2. Are we aware of any needed “urgent mitigative works” this year and are there any gaps in FN mitigative works which we are aware of? (perhaps canvas DIODs for ideas??)

FPP has funded numerous projects throughout the province over the past five years, however, there has not been a systematic technical review of what has been achieved in terms of reduced flood risk. Many of the individual projects only worked on parts of a diking system. So it is very difficult to answer this question – the question should be directed to the agency responsible for this program.

To my knowledge, very few of the diking systems have been completely brought up to provincial standards – almost every diking system continues to have weak points, or low sections, and further work needs to be done in almost all communities. Also, several smaller diking authorities have not been able to access the FPP funds (i.e. Nicomen Island, Barnston Island etc.) Given the late date, I do not believe that there is time to complete any significant urgent mitigative works prior to freshet. The key now is for diking authorities to ensure their inspections are complete and that they have an emergency response plan in place for their specific dike (as per the IOD mail out letter).

With respect to FN mitigative works, Paula Santos, Manager, Specialist Services, Community Infrastructure Directorate, advised me that AANDC are hiring engineering consultants to do some dike inspections of FN works prior to freshet – presumably they will focus on high risk areas (Skeena/Nass etc.). It would make sense for EMBC to request the results of this work and forward region specific information to the regional PREOCs/Planning Sections.

As part of the FLNRO Regional Operations preparations/training to organize field flood assessment and technical services, my understanding is that regional section heads will be compiling a list of vulnerable areas in their regions - and this would include the First Nations communities' issues that they are aware of.

Training for Local Governments:

1. Is anyone at the local level in water intending to or have the capacity to deliver training for local authorities in dike inspection & maintenance, sandbagging, flood response, etc. this year? Glen and I expressed concerns about our capacity to deliver such training before freshet but I would welcome your thoughts.

In 2007, MoE led/attended 12 flood preparedness workshops for local governments and diking authorities at various locations around the province. The 2007 WSD Freshet Debrief report recommended that similar training efforts be completed as part of future freshet preparations. As per the discussions at the COP, there is no capacity for this within the Flood Management group. However, if EMBC is holding any local government workshops FLNRO staff (and/or our auxiliaries) could potentially participate?

The Lower Fraser has been identified as an area of increased flood risk this spring. Given the experience in 2007, there appears to be insufficient capacity to fulfill FLNRO's Regional Operations' 2012 BC Flood Response Plan Roles and Responsibilities in the South Coast Region. By copy of this message to Julia and John, they may wish to see this issue elevated to the CCG level?

Thanks,
Neil

From: Mason, Wenda FLNR:EX
Sent: Sunday, April 22, 2012 6:43 AM
To: Symonds, Brian FLNR:EX; Peters, Neil J FLNR:EX; Campbell, David FLNR:EX
Cc: Davidson, Glen W FLNR:EX
Subject: Re: Actions from April 20th CCG Core Call

Hi Brian

Thanks for the summary from the CCG call. A couple of initial comments:

1. I don't believe that it is the RFC's role to identify specific communities at risk for several reasons: we do not necessarily know the communities at risk along every river system; which communities flood under what conditions; the status of flood mitigation works etc. The RFC provides the snow pack info and stream flow advisories and Dave participates on the local government readiness calls and then PREOC calls as set up by EMBC to advise on local snowpack and streamflow conditions from which then the local gov'ts and EMBC determine the communities at risk and actions required. That said there are the obvious communities (Houston, Telkwa etc) that Dave will identify in his forecasting work.
2. Dave and I haven't spoken about additional snow data; it is certainly a good idea. I will follow up on this on Monday along with the dam fly-over idea (see below).
3. I have forwarded the dam fly-over idea to Scott and will discuss it with him when I'm back in the office on Monday aft.

Cheers
W.

From: Symonds, Brian FLNR:EX
Sent: Friday, April 20, 2012 04:54 PM
To: Mason, Wenda FLNR:EX; Peters, Neil J FLNR:EX; Campbell, David FLNR:EX
Cc: Davidson, Glen W FLNR:EX
Subject: Actions from April 20th CCG Core Call

Hi everyone,

There were a few questions and issues raised at the CCG call today which I thought I should share with you.

RFC Issues:

1. There was a request that the RFC updates move from the basin level to be more specific as to which communities might be at risk. My sense is that other than a general reference to those communities in the watersheds with high snowpacks who have experienced problems in the past may be at risk freshet, this level of detail might need to wait until we get a better sense of how things are unfolding this freshet
2. Has any consideration been given to what sort of snow survey flyovers which might be requested to assess the extent of the snowpack in specific areas? This has been done during previous higher snowpack years often in conjunction with rapid assessments of aerial dams (see below). Also, it was suggested we should contact Wildfire Management Branch about flights.

Mitigative Works:

3. Are the different mitigative works constructed in recent years considered when we do the modelling of hazards and risks? Also, have we consider recent FN mitigative works? Suggested that we may want to discuss with Carol Loski.
4. Are we aware of any needed “urgent mitigative works” this year and are there any gaps in FN mitigative works which we are aware of? (perhaps canvas DIODs for ideas??)

Training for Local Governments:

2. Is anyone at the local level in water intending to or have the capacity to deliver training for local authorities in dike inspection & maintenance, sandbagging, flood response, etc. this year? Glen and I expressed concerns about our capacity to deliver such training before freshet but I would welcome your thoughts.

Dam Safety:

1. They were looking for an update on where we were at with our dam safety program and state of readiness which we explained was better than in recent years. There was also a question about whether any thoughts had been given to aerial inspections for obvious problems such a blocked spillways, etc. prior to freshet. (see RFC 2 above).

I would welcome any thoughts or input you might have on any of the questions or items above.

Brian Symonds
Director , Water Stewardship
Tel: (250) 490-8255 Fax: (250) 490-2231

Band Number	Band	Site	Site Number	Asset Name	Asset #	Asset Ext #	Asset Code	Quantity Description	Quantity Number	Last Inspected Date	Year Constructed	Remarks	Calculated Fiscal Year	Regional NFR
533	Glen Vowell	SIK-E-DAKH 2	06760	DYKE	891000	01	D9A	m	3200		2004	CPMS#5320 Flood Protection for Skeena River	20122013	\$3,856.32
539	Nuxalk Nation	BELLA COOLA 1	07879	DYKE/Training Berm	702100	01	D9A	m	875		2004	CPMS#6294 Thorsen Creek	20122013	\$1,105.65
539	Nuxalk Nation	BELLA COOLA 1	07879	DYKE/Training Berm	702100	02	D9A	m	660		2004	CPMS#7294 Tsatsquan Creek	20122013	\$833.98
541	Owekeeno/Wuikwuxw Nation	KATIT 1	07900	DYKE	701000	01	D9A	m	1615		1990	UNNAMED CK	20122013	\$2,640.85
550	Musqueam	MUSQUEAM 2	08358	DYKE	701000	01	D9A	m	785	23-02-2006 12:00 AM	1970	GOLF COURSE - N. ARM FRASER RIVER	20122013	\$791.28
555	Squamish	AIKWUCKS 15	07979	DYKE	701000	01	D9A	m	800	11-01-2006 12:00 AM	1977	100METRES OF GRAVEL SURFACE ROAD/DYKE - PREVIOUSLY A DIRT PATH.	20122013	\$806.40
555	Squamish	STAWAMUS 24	07984	GRAVEL ROAD/DYKE	701000	02	D9A	m	100	11-01-2006 12:00 AM	1999	LILLOOET AND BIRKENHEAD R. - MAIN DYKE IR#1,8,3 - SITE 'A'	20122013	\$112.00
557	Mount Currie	MOUNT CURRIE 1	07996	DYKE	701000	01	D9A	m	8030	13-03-2006 12:00 AM	1981	LILLOOET AND BIRKENHEAD R. - POLEYARD DYKE - SITE 'C'	20122013	\$10,255.92
557	Mount Currie	NESUCH 3	07998	DYKE	602000	02	D9A	m	6200	23-10-2001 12:00 AM	1980	DYKE ALONG LILLOOET RIVER	20122013	\$7,918.64
557	Mount Currie	MOUNT CURRIE 6	08001	DYKE	701000	01	D9A	m	129	16-02-2006 12:00 AM	1990	LILLOOET AND BIRKENHEAD R. - PEG CK TRAINING WORKS	20122013	\$164.76
557	Mount Currie	MOUNT CURRIE 6	08001	Peq Creek Training Berm	701000	02	D9A	m	870	21-02-2006 12:00 AM	2002	CPMS#5344, Along West Bank of Peq Creek, XitOlaow Village	20122013	\$1,111.16
557	Mount Currie	MOUNT CURRIE 10	08005	DYKE	701000	01	D9A	m	182	16-02-2006 12:00 AM	1973	LILLOOET AND BIRKENHEAD R. - POLEYARD DYKE - SITE 'C'	20122013	\$232.45
559	Sis'alles	CHEHALIS 5	08007	DYKE	701000	01	D9A	m	383	02-02-2006 12:00 AM	1991	CHEHALIS R. - SETBACK DYKE SITE 'B'	20122013	\$428.96
560	Kwikwetlem First Nation	COQUITLAM 1	08009	DYKE	602000	01	D9A	m	60		1999		20122013	\$67.20
562	Skatin Nations	SKOOKUMCHUCK 4	08015	DYKE WORKS	701000	01	D9A	m	480	17-02-2006 12:00 AM	1999	480 M LENGTH DYKE LINED WITH 1500M DIA ARMOUR STONE ALONG THE DYKE FACE	20122013	\$784.90
564	Kwantlen First Nation	MCILLAN ISLAND 6	08034	DYKE	701000	01	D9A	m	1230	28-01-2006 12:00 AM	1999	NORTH RIDGE DYKE - FROM GLOVER ROAD TO GABRIEL LANE	20122013	\$1,377.60
567	Samahquam	QALATKU7EM	08041	DYKE WORKS	701000	01	D9A	m	370	17-02-2006 12:00 AM	1999	CREEK TRAINING BERM: LENGTH 370M HEIGHT 2 M.	20122013	\$605.02
568	Scowitz	SQUAWKUM CREEK 3	08046	DYKE	701000	01	D9A	m	310		1992		20122013	\$347.20
572	Soowahlie	SOOWAHLE 14	08051	DYKE	701000	01	D9A	m	1870	19-01-2006 12:00 AM	1990	CHILLIWACK RIVER	20122013	\$1,884.96
572	Soowahlie	SOOWAHLE 14	08051	DYKE	701000	02	D9A	m	750	19-01-2006 12:00 AM	1990	ASSET UPGRADED 1999 MITIGATIVE FLOOD WORKS PROGRAM - CHILLIWACK RIVER, SWELTZER CREEK	20122013	\$840.00
582	Skawahook First Nation	RUBY CREEK 2	08075	DYKE	701000	01	D9A	m	130	12-01-2006 12:00 AM	1975	FRASER R. RUBY CK - GROVNE SITE 'A'	20122013	\$145.60
586	Peters	PETERS 1	08084	DYKE	701000	01	D9A	m	320	01-02-2006 12:00 AM	1970	FRASER RIVER	20122013	\$358.40
589	Yale First Nation	LUKSEETSISSUM 9	08104	DYKE	810000	01	D9A	m	350		2002	West bank of Ruby Creek. CPMS# 5346.	20122013	\$392.00
598	Lower Similkameen	CHOPAKA 7 & 8	07403	DYKE	701000	01	D9A	m	6950	23-09-2008 12:00 AM	1981	SIMILKAMEEN R - SITE E	20122013	\$7,756.20
598	Lower Similkameen	ASHNOLA 10	07405	DYKE	701000	01	D9A	m	505	23-09-2008 12:00 AM	1983	ASHNOLA RIVER - SITE A	20122013	\$626.20
598	Lower Similkameen	ASHNOLA 10	07405	DYKE - GROVNE	701000	02	D9A	m	70	23-09-2008 12:00 AM	1983	ASHNOLA RIVER - SITE B - GROVNE	20122013	\$86.80
617	Tlazten Nation	TACHE 1	07554	DYKE	700000	01	D9A	m	680		2007	New dyke foreshore protection w/ rip rap armour along West Tache Egress rd (approx. 460m) and west end village (approx 220m) CPMS#8915	20122013	\$819.47
642	Cowichan	COWICHAN 1	06799	DYKE	701000	01	D9A	m	1200	21-11-1990 12:00 AM	1985	N. FORK COWICHAN R. - QUAMICHAN SITE 'A'	20122013	\$1,242.00
642	Cowichan	COWICHAN 1	06799	DYKE	701000	02	D9A	m	630	22-11-1990 12:00 AM	1985	COWICHAN R. - S. SIDE SPUR SITE 'B'	20122013	\$652.05
642	Cowichan	COWICHAN 1	06799	DYKE	701000	03	D9A	m	418	21-11-1990 12:00 AM	1985	KOKSILAH R. - KOKSILAH VILLAGE WEST - SITE 'E'	20122013	\$432.63
642	Cowichan	COWICHAN 1	06799	DYKE	701000	04	D9A	m	2320	22-11-1990 12:00 AM	1985	COWICHAN R. - MISSION ROAD SITE 'F'	20122013	\$2,401.20
642	Cowichan	COWICHAN 1	06799	DYKE	701000	05	D9A	m	1175	21-11-1990 12:00 AM	1985	N. FORK COWICHAN ROAD - TOOSHLEY SITE 'G'	20122013	\$1,216.13
642	Cowichan	COWICHAN 9	06807	DYKE	701000	01	D9A	m	650	21-11-1990 12:00 AM	1978	KOKSILAH R. - CLEM ELEM SITE 'C'	20122013	\$672.75
648	Snuneymuxw First Nation	NANAIMO RIVER 3	06817	DYKE	701000	01	D9A	m	1815	23-01-1991 12:00 AM	1934	NANAIMO RISTR OF GEORGIA - BOUNDARY SITE 'A'	20122013	\$2,087.25
648	Snuneymuxw First Nation	NANAIMO RIVER 3	06817	DYKE	701000	02	D9A	m	835	23-01-1991 12:00 AM	1934	NANAIMO RISTR. OF GEORGIA - YORK CK SITE 'D'	20122013	\$960.25
655	Tsaycum	UNION BAY 4	06834	DITCHES AND SWALLS	791000	01	D9A	m	2349		2006	INVERTED DYKE	20122013	\$2,701.35
676	Haisla Nation	KITAMAAT 2	07620	DYKE	701000	01	D9A	m	150		1991	WATHL R. - SITE 'B'	20122013	\$187.50
676	Haisla Nation	KITAMAAT 2	07620	DYKE	701000	02	D9A	m	200		1989	WATHL R. - SITE 'D'	20122013	\$250.00
686	Bonaparte	BONAPARTE 3	07165	SETBACK BERM	701000	01	D9A	m	70	10-09-2008 12:00 AM	1999	WORK FUNDED UNDER 1999 MITIGATIVE FLOOD WORKS PROGRAM	20122013	\$89.40

Band Number	Band	Site	Site Number	Asset Name	Asset #	Asset Ext #	Asset Code	Quantity Description	Quantity Number	Last Inspected Date	Year Constructed	Remarks	Calculated Fiscal Year	Regional NFR
688	Tk'emlups te Secwépemc	KAMLOOPS 1	07173	DYKE	701000	02	D9A	m	3740	07-10-2008 12:00 AM	1999	POW-WOW DYKE, YELLOWHEAD BRIDGE/KAMLOOPA, The South Thompson portion of the dyke is in poor condition, where as the remainder of the dyke is in goo condition. The Remaining Life and GCR reflect the condition of the South Thompson Dyke. ACRS 2008	20122013	\$4,637.60
689	Little Shuswap Lake	QUAAOUT 1	07178	DYKE	702000	03	D9A	m	820	25-04-2005 12:00 AM	1999	FROM LITTLE SHUSWAP LAKE TO 820M UPSTREAM ON S. THOMPSON RIVER (UPGRADE TO EXISTING BANK PROTECTION). The GCR reflects the condition of the bank protection. ACRS 2008	20122013	\$1,047.30
702	Whispering Pines/Clinton	WHISPERING PINES 4	08364	DYKE	701000	01	D9A	m	4070	08-10-2008 12:00 AM	2003	N. THOMPSON R. - SITE 'A'. Rebuilt 2003, quantity changed from 3545 m to 4070 m ACRS 2008.	20122013	\$5,198.20

Rosche, Kimberly FLNR:EX

From: Cameron, Valerie Z FLNR:EX
Sent: Tuesday, May 14, 2013 3:06 PM
To: Filmer, Cam A TRAN:EX
Cc: Campbell, David FLNR:EX; Davidson, Glen W FLNR:EX; Pattle, John R FLNR:EX; Cosman, Scott B FLNR:EX; Peters, Neil J FLNR:EX; Symonds, Brian FLNR:EX; Mason, Wenda FLNR:EX
Subject: RE: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Here are my comments for the items assigned to me:

Adequate staff for PREOC support

MFLNRO staff in all potentially impacted regions are making preparations for potential flood response, including planning meetings with EMBC regional staff, updating observer, assessor, and specialist call out rosters, PREOC support, and most have put on training for staff. I will be contacting regions regarding coverage over the coming Victoria Day long weekend to determine if there are any staffing gaps. I would say we are green for this section, except for the possibility of yellow for this weekend.

Flood Preparedness Workshops

In addition to the seasonal preparedness workshops put on by EMBC in which flood preparedness was discussed, MFLRNO staff have already or are planning to put on flood training for local governments in the Kootenays. I am not aware of any other training for LGs planned, although there have been observer/assessor training sessions put on for MFLNRO staff. I would suggest yellow for this section, as not all regions have put on internal training.

Valerie

From: Peters, Neil J FLNR:EX
Sent: Tuesday, May 14, 2013 1:01 PM
To: Filmer, Cam A JAG:EX
Cc: Campbell, David FLNR:EX; Davidson, Glen W FLNR:EX; Pattle, John R FLNR:EX; Cameron, Valerie Z FLNR:EX; Cosman, Scott B FLNR:EX
Subject: RE: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Hi Cam – here are a few comments on two of the items you have assigned to me.

Lower Fraser Water Level Forecasts

FLNRO's Water Resources Engineer (Khalid Khan) is currently running the Fraser River Hydraulic Model and is receiving water level gauge data on the river from municipalities, FLNRO gauge readers etc. for approx. 70 gauges starting today. Because of the rapidly changing inflows due to the weather patterns over the past week and because of gaps in streamflow gauging for Lower Fraser tributaries, the model boundary conditions are somewhat uncertain for today. However, Khalid expects to be able to validate the model tomorrow and to provide the first prediction report by Thursday afternoon.

Lower Fraser River Non-Standard Dike Information

The information developed in 2012 can be used for this year. However, I will check with John Pattie to see what new insights might have been gained through recent assessment studies nearing completion for Barnston Island and Coquitlam Diking Districts as part of the *Drainage, Ditch and Dike Act* transition process.

Neil

Neil J. Peters, M.A.Sc., P.Eng.
Head, Flood Safety Section (provincial)
and Inspector of Dikes

Ministry of Forests Lands and Natural Resource Operations
Telephone: (604)586-4427
e-mail: Neil.Peters@gov.bc.ca
http://www.env.gov.bc.ca/wsd/public_safety/flood/fhm-2012/index.html

From: Filmer, Cam A JAG:EX
Sent: Tuesday, May 14, 2013 12:08 PM
To: Campbell, David FLNR:EX; Mason, Wenda FLNR:EX; Peters, Neil J FLNR:EX; Oakley, John JAG:EX; Loski, Carol JAG:EX; McCaffrey, Julianne GCPE:EX; Ritchie, Leanne GCPE:EX; Symonds, Brian FLNR:EX; Davidson, Glen W FLNR:EX; Cameron, Valerie Z FLNR:EX
Cc: Duffy, Chris D JAG:EX; Mohrmann, Ralph JAG:EX
Subject: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Hi everyone

Further to the CCG call late yesterday, please find some questions below on readiness. Green means everything is good, yellow that more pressing, red that there are major flags, and orange that needs confirmation.

Many of these items are carry-overs from previous years with heightened threat/risk levels.

Given we are late in the readiness year, this is more of a quick check, and in some regards a chance to document work done (or ongoing), or take off any items that are not required. As noted, is there anything also that needs support, or items that need to be added.

The items below are the ones that have FLNRO Water Management aspects.

If you could please reply to me with your specific item (and cc anyone else mentioned on your item), and how, if at all, you would like it reflected that would be appreciated.

Regards,

Cam

250-812-2377

Dave / Wenda – okay with this one?

☐ Confirmation of ongoing Spike in activity FLNRO – David

Ongoing

Neil – still okay? I wrote as yellow, given importance – go with that, or green that okay?

- | | | |
|---|---|------------------------|
| <input type="checkbox"/> Lower Fraser Water Level Forecasts | Available end of day
May 16 (Thursday) | FLNRO – Neil
Peters |
|---|---|------------------------|

Neil / JO / Carol – good on the latest intelligence on non-standard dikes? Sounds like same info as last year, and predominantly focused at SWE. Okay with saying good, and shifting to “green”

- | | | |
|--|-------------------------------|------------------------|
| <input type="checkbox"/> SWE Non-Standard
Dikes Information | Confirm latest
information | FLNRO – Neil
Peters |
|--|-------------------------------|------------------------|

Dave / Wenda / Jules – recorded integrated flood threat messaging as good – green. Okay with that?

- | | | |
|---|---|-----------------------|
| <input type="checkbox"/> Confirmation of flood
threat messaging and
communications | - Possible joint
requirements
(inclusion of public
safety messaging) | FLNRO /
Julianne M |
| <input type="checkbox"/> Readiness of joint RFC and
PECC/PREOC media
messaging and interviews | | FLNRO /
Julianne M |

Wenda / Brian – good on dam safety and snow survey aspects. Do you require anything? Are they both “green”, or is there more urgent checks you want done?

- | | | | |
|---|--|----------------------|-------------------|
| <input type="checkbox"/> Additional snow survey
analysis as required | | Brian S / Wenda
M | Is this required? |
| <input type="checkbox"/> Confirm Dam Safety
Branch readiness | Is Dam Safety okay
with state of
preparedness? | Wenda M | Is this required? |
| <input type="checkbox"/> Additional dam flyovers
as required | | Brian Symonds | Is this required? |

Valerie / Wenda – okay for staffing?

- | | | |
|---|--|-----------------|
| <input type="checkbox"/> Confirmation of RFC and
water management staff
capacity in the field | Is there adequate
staff for public
messaging, and
PREOC and PECC
support | Valerie Cameron |
|---|--|-----------------|

Valerie / Neil – appreciating we are very late in the year – any requirements for flood preparedness workshops (either internal or to LGs). I can add what Neil mentioned yesterday about dike protection educations aspects being added to the freshet website (FLNRO website?)

☐ Flood Preparedness
Workshops

Given timetables –
combine with others

Valerie Cameron
/ Kelli K

TBC for SWE?

Rosche, Kimberly FLNR:EX

From: Mason, Wenda FLNR:EX
Sent: Tuesday, May 14, 2013 3:55 PM
To: Filmer, Cam A TRAN:EX
Cc: Duffy, Chris D EMBC:EX; Mohrmann, Ralph EMBC:EX; Campbell, David FLNR:EX; Peters, Neil J FLNR:EX; Oakley, John JAG:EX; Loski, Carol FLNR:EX; McCaffrey, Julianne GCPE:EX; Ritchie, Leanne GCPE:EX; Symonds, Brian FLNR:EX; Davidson, Glen W FLNR:EX; Cameron, Valerie Z FLNR:EX
Subject: Wenda's Response to CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Hi Cam

Responses below. Brian Symonds and I conferred on the ones assigned to he and I.

Cheers

Wenda

From: Filmer, Cam A JAG:EX
Sent: Tuesday, May 14, 2013 12:08 PM
To: Campbell, David FLNR:EX; Mason, Wenda FLNR:EX; Peters, Neil J FLNR:EX; Oakley, John JAG:EX; Loski, Carol JAG:EX; McCaffrey, Julianne GCPE:EX; Ritchie, Leanne GCPE:EX; Symonds, Brian FLNR:EX; Davidson, Glen W FLNR:EX; Cameron, Valerie Z FLNR:EX
Cc: Duffy, Chris D JAG:EX; Mohrmann, Ralph JAG:EX
Subject: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Hi everyone

Further to the CCG call late yesterday, please find some questions below on readiness. Green means everything is good, yellow that more pressing, red that there are major flags, and orange that needs confirmation.

Many of these items are carry-overs from previous years with heightened threat/risk levels.

Given we are late in the readiness year, this is more of a quick check, and in some regards a chance to document work done (or ongoing), or take off any items that are not required. As noted, is there anything also that needs support, or items that need to be added.

The items below are the ones that have FLNRO Water Management aspects.

If you could please reply to me with your specific item (and cc anyone else mentioned on your item), and how, if at all, you would like it reflected that would be appreciated.

Regards,

Cam

Dave / Wenda – okay with this one?

OK ☐ Confirmation of ongoing risk assessment by RFC Spike in activity May 13 FLNRO – David Campbell

Ongoing. Next Snow Bulletin May 22nd will provide estimate of remaining snowpacks.

Neil – still okay? I wrote as yellow, given importance – go with that, or green that okay?

☐ Lower Fraser Specific Flood Forecast Possibly available end of day May 14 FLNRO – Neil Peters

Neil / JO / Carol – good on the latest intelligence on non-standard dikes? Sounds like same info as last year, and predominantly focused at SWE. Okay with saying good, and shifting to “green”

☐ SWE Non-Standard Dikes Information Confirm latest information FLNRO – Neil Peters

TBC

Dave / Wenda / Jules – recorded integrated flood threat messaging as good – green. Okay with that?

RFC Comment: WITH LONG WEEKEND COMING UP AND LOWER FRASER PEAKING FRIDAY INTO SATURDAY, PUBLIC SAFETY MESSAGING WILL BE IMPORTANT.

☐ Confirmation of flood threat messaging and communications - Possible joint requirements (inclusion of public safety messaging) FLNRO / Julianne M

OK for now - watch ☐ Readiness of joint RFC and PECC/PREOC media messaging and interviews FLNRO / Julianne M

RFC getting good support from GCPE (FLNRO). Media demands on RFC currently manageable. May need to go to coordinated media calls if media demands increase.

Wenda / Brian – good on dam safety and snow survey aspects. Do you require anything? Are they both “green”, or is there more urgent checks you want done?

<div>TBD (May 22nd)</div> <div>OK</div> <div>OK for now - watch</div>	<input type="checkbox"/>	Additional snow survey analysis as required		Brian S / Wenda M	Is this required? TOO EARLY TO DETERMINE IF ADD'L SURVEYS REQ'D. WILL KNOW BETTER AFTER MAY 15 th SNOW BULLETIN (available May 22 nd)
	<input type="checkbox"/>	Confirm Dam Safety Branch readiness	Is Dam Safety okay with state of preparedness?	Wenda M	Is this required? Emails sent to all H,VH, E dam owners. DSO's advised to contact any dam owners where DSO's have concern.
	<input type="checkbox"/>	Additional dam flyovers as required		Wenda/Brian Symonds	Is this required? With normal snowpack, general flyover dam assessments not required this year. May require site specific flights if a dam issue is identified.

Valerie / Wenda – okay for staffing?

<div>OK for now</div>	<input type="checkbox"/>	Confirmation of RFC and water management staff capacity in the field	Is there adequate staff for public messaging, and PREOC and PECC support	Valerie Cameron	TBC
	<input type="checkbox"/>	Confirmation of RFC capacity	Is there adequate staff for public messaging, and PREOC and PECC support	Wenda Mason	RFC staff all fully engaged. Some OT incurred to date. Current demand on RFC staff is manageable. Good support from GCPE.

Valerie / Neil – appreciating we are very late in the year – any requirements for flood preparedness workshops (either internal or to LGs). I can add what Neil mentioned yesterday about dike protection education aspects being added to the Freshet website (FLNRO website?)

☐ Flood Preparedness
Workshops

Given timetables –
combine with others

Valerie Cameron
/ Kelli K

TBC for SWE?

From: EMBC PECC Director 1 EMBC:EX
Sent: Wednesday, May 15, 2013 4:37 PM
Subject: PECC Situation Report - May 15

Importance: High

PECC SITUATION REPORT

Provincial Emergency Coordination Centre Situation Report – Update #1 15-May-2013-- 1630hrs

Provincial Situation:

Across the province rainfall has eased and temperatures have dropped significantly over the past two days reducing snow melt rates. Overall flood incidents across the province seem to be stabilizing or improving.

A 1,400 hectare interface fire (K20028) continues to burn in the Spatsum Creek area 10kms south of Ashcroft. An evacuation alert is in place for 50 properties in the area of concern.

Outlook:

- The short term weather forecast for this week shows a cooling trend throughout the province and a return to more seasonal norms.
- Conditions in the Upper Fraser are expected to stabilize with river levels dropping tomorrow and through the rest of the week.
- High flows are currently being experienced in Prince George, with peak levels of 9.73m reached earlier today (Fraser River at South Ft George).
- Current modelling for the Fraser River at Hope is forecasting flows to reach approximately 10,000 m³/s, with peak levels expected over the Friday to Saturday period.

Summary Statistics:

1. **Hazard-** Spring Freshet Flooding and Wildfires
18 incidents of note for provincial integrated response (1 fire and 17 flooding incidents).

2. **EMBC Provincial Overview-**

Provincial Emergency Coordination Center (PECC) Activated: Level 1

Provincial Regional Emergency Operations Centres (PREOC) Activated: Central-Level 2

TEAMS members activated: 3

Central Coordination Group (CCG) meeting: Not scheduled at this time.

Advanced planning activities: An Advanced Planning Unit has been activated and is working with provincial, federal and crown agencies to confirm completed work, ongoing initiatives, items that require support and any potential issues. No major issues are identified at this time.

3. **Human Consequence Management-**

Emergency Social Services (ESS) Reception Centres opened: 0

ESS Group lodging facilities: 0
Individuals on Evacuation Order: 0
Individuals on Evacuation Alert: 50 properties
Individuals registered with ESS: 2
Individuals injured: 0
Provincial volunteers deployed: 0

4. Provincial Infrastructure Impacts-

Transportation impacts: Refer to DriveBC for updated information.
Power outages: 0
Natural gas outages: 0
Telecommunications disruptions: 0
Water impacts: 0
Livestock impacted: 0
Provincial Park/Campground impacts: 0

5. Key Stakeholder Summary-

Provincial:

Ministry of Justice

Emergency Management BC (EMBC) – The PECC is activated at level 1 in support of the CTL PREOC and EMBC regional offices supporting local governments.

- The CTL PREOC is activated and supporting the Columbia Shuswap Regional District (CSRD), Thompson Nicola Regional District (TNRD), Central Okanagan Regional District (CORD) and Regional District Okanagan Similkameen (RDOS).

The provincial stockpile contains 1.4M sandbags and approximately 12.5 km of gabion baskets. EMBC has 8 sandbag machines strategically placed throughout the province, 2 of which are deployed to Mt Currie and Salmon Arm.

Ministry of Forests, Lands and Natural Resource Operations (FLNRO)

River Forecast Centre (RFC) – Continues to issue flood alert bulletins to the local authorities and general public. The RFC also has presented region specific reports and assessments on coordination calls to affected regions of the province.

River Forecast Centre Bulletins currently in effect:

High Streamflow Advisory

- Fraser River at Quesnel
 - Flows are expected to be high through Quesnel overnight and on Thursday.
- Fraser River including Fraser Canyon, Hope and Lower Mainland
 - The lower reaches of the Fraser River have been flowing high as a result of rapid snowmelt and rainfall over the past 2 weeks. Water from the Upper Fraser is expected to work its way down through the Fraser River system, and produce an increase in flows through the Lower Mainland over the coming days.

- The Fraser River at Hope has started a slow rise, and is currently flowing at 9130 m³/s (2-year flow). Current modelling for the Fraser River at Hope is forecasting flows to reach approximately 10,000 m³/s, with peak levels expected over the Friday to Saturday period.
- Osoyoos Lake: Lake levels are expected to continue to rise over the next few days.

Flood Watch

- None issued

Flood Warning

- Upper Fraser River at Prince George and Upstream: River levels along the Upper Fraser have risen over the past few days, and are currently at or near the peak levels.
 - McGregor River at Lower Canyon is flowing at 930 m³/s and gauge height 3.7 m (below a 2-year flow). The river is now slowly dropping and is expected to continue dropping through today.
 - Fraser River at Hansard is flowing at 2385 m³/s and gauge height of 7.45m (5-year flow). The Fraser River at Hansard is expected to drop through today.
 - Fraser River at Shelley is flowing at 4600 m³/s and gauge height of 8.0 m (20-year flow). The Fraser River at Shelley has peaked and is expected to hold near current levels through mid-day today, and then begin dropping this afternoon.
 - Fraser River at South Fort George is currently at 9.75 m and is nearing peak levels. The river may rise an additional 1-3 cm by mid-day today, and then is expected to begin to drop this evening.
 - Conditions are expected to stabilize with river levels dropping tomorrow and through the rest of the week.

Wildfire Management Branch (WMB) – Four WMB staff were deployed to assist with sandbagging in Foreman Flats in the Fraser Fort George Regional District.

Ministry of Transportation and Infrastructure- The MoTI continues to monitor and respond to road conditions/impacts and update DriveBC website.

Federal:

Aboriginal Affairs and Northern Development Canada (AANDC) are being kept apprised of the First Nations communities being affected by river levels.

6. Regional and Local Government Overview

PREOC Activated: Central

Local Authority Emergency Operations Centres Activated: TNRD (Monitoring) and CSRD (Monitoring)

Declarations of State of Local Emergency: 0

Band Council Resolutions: 0

Evacuation Orders: 0

Evacuation Alerts: 1

Reception Centres: 0

Group Lodging Centres: 0

In the EMBC Central region the overall regional situation is improving and flows are decreasing today.

Localized flooding is occurring on Osoyoos lake and sandbagging efforts are in process. Temporary emergency works are being conducted on Sicamous Creek and are estimated to be completed by Friday. The Shackan

First Nations continues to be affected by flooding and sandbagging is underway. The Spatsum fire is stable, although 50 properties remain under evacuation alert.

In the EMBC Northeast Region, Fraser Fort George Regional District Emergency Operations Centres is activated at level 2 and the City of Prince George remains activated at level 1. A coordination call with local authorities took place this morning. 3 homes in Foreman Flats and 5 homes in Shelley are currently being affected by water levels. 2 individuals have received Emergency Social Services support. The PREOC is not currently activated.

In the EMBC Southwest Region, the Squamish Lillooet Regional District (SLRD) and Pemberton Valley Diking District (PVDD) have completed emergency works. Water levels are currently receding. 3-4 homes in Mt Currie continue to be affected due to flood waters.

In the EMBC Southeast Region the situation is improving and the Regional District Kootenay Boundary has demobilized. The PREOC is not currently activated.

Key Internet Links:

Weather: <http://www.weatheroffice.gc.ca/bc>

Wildfire Information: <http://bcwildfire.ca/>

Roads and Highways Information: <http://drivebc.ca/>

River Forecast Centre: <http://bcrfc.env.gov.bc.ca/warnings/>

APPROVED BY:

Sonia Woolford
PECC Director

Rosche, Kimberly FLNR:EX

From: Filmer, Cam A TRAN:EX
Sent: Tuesday, May 14, 2013 12:08 PM
To: Campbell, David FLNR:EX; Mason, Wenda FLNR:EX; Peters, Neil J FLNR:EX; Oakley, John JAG:EX; Loski, Carol FLNR:EX; McCaffrey, Julianne GCPE:EX; Ritchie, Leanne GCPE:EX; Symonds, Brian FLNR:EX; Davidson, Glen W FLNR:EX; Cameron, Valerie Z FLNR:EX
Cc: Duffy, Chris D EMBC:EX; Mohrmann, Ralph EMBC:EX
Subject: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Hi everyone

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If you could please reply to me with your specific item (and cc anyone else mentioned on your item), and how, if at all, you would like it reflected that would be appreciated.

Regards,

Cam

250-812-2377

Dave / Wenda – okay with this one?

<input type="checkbox"/>	Confirmation of ongoing risk assessment by RFC	Spike in activity May 13	FLNRO – David Campbell	Ongoing
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Neil – still okay? I wrote as yellow, given importance – go with that, or green that okay?

<input type="checkbox"/>	Lower Fraser Specific Flood Forecast	Possibly available end of day May 14	FLNRO – Neil Peters	
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Neil / JO / Carol – good on the latest intelligence on non-standard dikes? Sounds like same info as last year, and predominantly focused at SWE. Okay with saying good, and shifting to “green”

<input type="checkbox"/> SWE Non-Standard Dikes Information	Confirm latest information	FLNRO – Neil Peters	TBC
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Dave / Wenda / Jules – recorded integrated flood threat messaging as good – green. Okay with that?

<input type="checkbox"/> Confirmation of flood threat messaging and communications	- Possible joint requirements (inclusion of public safety messaging)	FLNRO / Julianne M	
<input type="checkbox"/> Readiness of joint RFC and PECC/PREOC media messaging and interviews		FLNRO / Julianne M	

Wenda / Brian – good on dam safety and snow survey aspects. Do you require anything? Are they both “green”, or is there more urgent checks you want done?

<input type="checkbox"/> Additional snow survey analysis as required		Brian S / Wenda M	Is this required?
<input type="checkbox"/> Confirm Dam Safety Branch readiness	Is Dam Safety okay with state of preparedness?	Wenda M	Is this required?
<input type="checkbox"/> Additional dam flyovers as required		Brian Symonds	Is this required?

Valerie / Wenda – okay for staffing?

<input type="checkbox"/> Confirmation of RFC and water management staff capacity in the field	Is there adequate staff for public messaging, and PREOC and PECC support	Valerie Cameron	TBC
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Valerie / Neil – appreciating we are very late in the year – any requirements for flood preparedness workshops (either internal or to LGs). I can add what Neil mentioned yesterday about dike protection education aspects being added to the freshet website (FLNRO website?)

<input type="checkbox"/> Flood Preparedness Workshops	Given timetables – combine with others	Valerie Cameron / Kelli K	TBC for SWE?
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Rosche, Kimberly FLNR:EX

From: Cameron, Valerie Z FLNR:EX
Sent: Wednesday, November 8, 2017 3:47 PM
To: Foran, Margo FLNR:EX
Cc: Hahn, Mitchell FLNR:EX; White, Ted T FLNR:EX
Subject: FW: CCG / PECC Freshet 2012 Advanced Planning Item - Community Data Gathering - Flood Information

Again, this is a response to CCG action item, not a submission to CCG. Don't know where the info went after we sent it. It would have been up to Glen to advance it.

Do we have access to Glen's email archives? Is his IDIR still active? I know we kept it active because he was expecting to come back to mentor the new CWR, but that never happened.

Valerie

From: Cameron, Valerie Z FLNR:EX
Sent: Thursday, May 10, 2012 4:24 PM
To: Peters, Neil J FLNR:EX; Davidson, Glen W FLNR:EX
Cc: Symonds, Brian FLNR:EX; Mason, Wenda FLNR:EX
Subject: RE: CCG / PECC Freshet 2012 Advanced Planning Item - Community Data Gathering - Flood Information

Hi all,

One of the potential projects we considered this spring was a compilation of corporate memory from our seasoned regional staff, i.e. approaching people^{s.22} and documenting some of their corporate memory on historic flood events, river behaviour, hot spots, key contacts, and successful and unsuccessful flood mitigation measures in their regions. This would supplement existing data such as floodplain mapping where it exists and hydrological information.

The objectives of this exercise would be twofold: 1) to promote the retention of corporate memory for succession planning, and 2) to pass key regional background information onto staff who might be deployed in a region they are unfamiliar with during a flood event. Although we chose instead to use the funding to hire Jonathan and Don to do the flood response training package, the corporate memory project is one I was keeping on the shelf to pull out if we ever got funding to do so. I think this will be an important exercise for MFLNRO if we are to retain our status as the flood technical specialists in government.

It appears that what EMBC is proposing is a variant of that project, although focusing on community memory rather than staff memory. I am not quite sure how this information would be used for management purposes. In the format that is being proposed (the spreadsheet), the information will not have sufficient detail to be useful. The geomatics mapping might provide a visual to the public, but for use by emergency officials, updated floodplain maps as Neil suggests would be far more useful. The RFC already provides the timely information needed for communication risk associated with snow conditions and weather, and communities already know if they are at risk, so I am wondering what the value-added would be. Or am I missing something?

If this project goes ahead, I hope it will be after freshet.

Thanks for the opportunity to provide comment.

Valerie

From: Peters, Neil J FLNR:EX
Sent: Wednesday, May 9, 2012 4:27 PM
To: Davidson, Glen W FLNR:EX
Cc: Symonds, Brian FLNR:EX; Cameron, Valerie Z FLNR:EX; Mason, Wenda FLNR:EX
Subject: RE: CCG / PECC Freshet 2012 Advanced Planning Item - Community Data Gathering - Flood Information

Glen – it may also be helpful to mention to EMBC that hundreds of flood hazard areas (primarily fans) have not been formally mapped – but that much information was collected in the “Flood Hazard Maps” database that MoE prepared as part of the 2003/04 transition (for a cost of about \$0.5M).

http://www.env.gov.bc.ca/wsd/public_safety/flood/fhm-2012/cabinet/flood_hazard_map_user_guide.pdf

Neil

From: Peters, Neil J FLNR:EX
Sent: Wednesday, May 9, 2012 4:02 PM
To: Davidson, Glen W FLNR:EX
Cc: Symonds, Brian FLNR:EX; Cameron, Valerie Z FLNR:EX; Mason, Wenda FLNR:EX
Subject: FW: CCG / PECC Freshet 2012 Advanced Planning Item - Community Data Gathering - Flood Information
Importance: High

Hi Glen,

If I understand correctly, the objectives of this project are to:

- identify the communities in BC that are vulnerable to freshet flooding,
- prepare descriptions of historic flood events that have impacted these communities and
- provide other information that might helpful in defining the flood risk in these communities.

The information would be displayed/indexed on an interactive map of the province. The primary purpose would be to help elected representatives and senior officials better understand the distribution of flood risk throughout the province – in a qualitative sense.

Comments:

- this is not a floodplain mapping project – and would not involve new base mapping, hydrology, or hydraulic analysis.
- The information would need to be based on floodplain maps prepared under the former provincial/federal program (now largely out of date) and any other more recent flood hazard studies (the 10 year Floodplain Mapping Program designated 89 floodplain areas – 545 map sheets at 1:5000 scale).
- There are approximately 157 municipalities and 27 Regional Districts (each RD has multiple communities)
- based on MoE mail out surveys done in 2002, more than half of these have significant flood issues (more than 100 communities). There are also approx. 110 diking authorities in the province.
- Without a thorough understanding of the context, historic events affecting any one community may not be a good indicator of flood risk.

Conclusion – this project would be extremely time consuming but would provide little more than a superficial, anecdotal understanding of the hazards and consequences (risk) – it may as well be misleading. I strongly recommend that the

province devote its scarce resources to establishing a modern floodplain mapping program, with objectives similar to USA and European mapping standards.

Neil

Neil J. Peters, M.A.Sc., P.Eng.
Head, Flood Safety Section (provincial)
and Inspector of Dikes

Ministry of Natural Resource Operations
Telephone: (604)582-5260
Fax: (604) 582-5235
e-mail: Neil.Peters@gov.bc.ca
http://www.env.gov.bc.ca/wsd/public_safety/flood/structural.html

From: Filmer, Cam A JAG:EX
Sent: Wednesday, May 9, 2012 10:12 AM
To: Peters, Neil J FLNR:EX; Symonds, Brian FLNR:EX; Davidson, Glen W FLNR:EX; Mason, Wenda FLNR:EX; Cameron, Valerie Z FLNR:EX; Duffy, Chris D JAG:EX; Mohrmann, Ralph JAG:EX; Woolford, Sonia JAG:EX; Tomaz, David JAG:EX; Loski, Carol JAG:EX; Smith, Todd J JAG:EX
Cc: Curtis, David JAG:EX; Trytten, Tim G JAG:EX; McKeachie, Anne M JAG:EX; Lewis, Cameron F JAG:EX; Kryzanowski, Kelli JAG:EX
Subject: CCG / PECC Freshet 2012 Advanced Planning Item - Community Data Gathering - Flood Information
Importance: High

FYI

As mentioned on the expanded CCG call Monday, as part of Freshet 2012 Advanced Planning items

The following is a first cut by Carol Loski on community data gathering. Carol has imbedded in the following draft Project Initiation Document (PID) future goals and objectives for data gathering, as it related to flood threat, communities, water courses, and present and past associated variables. Carol also produced a draft format for data gathering (please see attached)

We are seeing a very strong demand from many stakeholders for enhanced situational awareness, which this is part of. There is also strong demand for related geospatial analysis ability, and visual representations. We are definitely being tasked from senior levels to work on this – there is expectation there that we enhance what we currently have, in part so briefings to senior officials and leaders can be enhanced.

Neil, Brian and Glen – would be very interested in your thoughts on this. Heads up to yourselves and Chris Duffy that it is thought the regions will be key in building data.

We have geospatial experts that are now looking at this (through Todd Smith) – we can most likely get support from GeoBC on (Todd is already linking into them).

For EMBC Carol Loski, Todd Smith and Cam Filmer have been assigned to this as main leads.

What is our ability to move forward on this. Before replies are provided, I think both Carol L and Chris D had additional thoughts they were going to add to this e-mail.

Cam

**CCG / PECC
Community Data Gathering
Flooding Information
2012**

Purpose:

Gather local information related to provincial watercourses, communities and history of flooding events to serve as a basis for documentation and geomatics. The first phase will be to gather the information and link to communities, the second phase to coordinate with Geo BC, FLNRO on mapping, and the third phase potential to link to social media, open government and supply citizens with quality information on flood risk.

Objectives:

- Develop a central repository of communities along major watercourses and in regions around the province.
- Gather information on historic events in communities to help identify communities that may be of heightened risk depending on the technical factors associated with freshet and high precipitation events.
- Provide base information to feed into existing and new mapping databases.

Methodology:

1. Information Gathering: (immediate)
 - Regional Managers meet with FLNRO staff regularly to review technical information such as snow pillows, dam safety and forecasts. Local staff review current information, past information and develop regional intelligence on areas of high likelihood or risk of flooding.
 - Information will be recorded on attached spreadsheet and forwarded to coordinator.
2. Populate data with reference materials from the River Forecast Centre, (for example: Upper Fraser Basin, Dome Mountain Gauge – feeds xx Communities). (immediate – short term utilize 2012 freshet)
 - Develop database
 - Suitable for communications staff and CCG
3. Collaborating with Geo BC, FLNRO: (short to medium term – 3 months)
 - Incorporate and develop additional mapping to visually represent materials.
 - Approach Geo BC to assist with development
4. Develop full database, social media (long term – 6 months)

From: Loski, Carol JAG:EX
Sent: Friday, May 4, 2012 15:17 PM
To: Filmer, Cam A JAG:EX; Smith, Todd J JAG:EX
Subject: FW: Community Events - Data Gathering April 2012.xlsx

From: Loski, Carol JAG:EX
Sent: Monday, April 30, 2012 4:58 PM
To: Denlinger, Becky JAG:EX
Cc: Curtis, David JAG:EX
Subject: Community Events - Data Gathering April 2012.xlsx

Very rough first thoughts on Data Gathering.

I understand that this information is discussed at each Region, the spreadsheet attached will provide a means to collect and document the information.

Please let me know what you think.

Thank you, Carol

Rosche, Kimberly FLNR:EX

From: Cameron, Valerie Z FLNR:EX
Sent: Wednesday, November 8, 2017 3:43 PM
To: Foran, Margo FLNR:EX
Cc: Hahn, Mitchell FLNR:EX; White, Ted T FLNR:EX
Subject: FW: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Not sure if this fits the bill. This is part of our response to a CCG request. I don't know if it made it to CCG. I've found a few of these in the Flood Safety folder.

From: Cameron, Valerie Z FLNR:EX
Sent: Tuesday, May 14, 2013 3:06 PM
To: Filmer, Cam A JAG:EX
Cc: Campbell, David FLNR:EX; Davidson, Glen W FLNR:EX; Pattle, John R FLNR:EX; Cosman, Scott B FLNR:EX; Peters, Neil J FLNR:EX; Symonds, Brian FLNR:EX; Mason, Wenda FLNR:EX
Subject: RE: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Here are my comments for the items assigned to me:

Adequate staff for PREOC support

MFLNRO staff in all potentially impacted regions are making preparations for potential flood response, including planning meetings with EMBC regional staff, updating observer, assessor, and specialist call out rosters, PREOC support, and most have put on training for staff. I will be contacting regions regarding coverage over the coming Victoria Day long weekend to determine if there are any staffing gaps. I would say we are green for this section, except for the possibility of yellow for this weekend.

Flood Preparedness Workshops

In addition to the seasonal preparedness workshops put on by EMBC in which flood preparedness was discussed, MFLRNO staff have already or are planning to put on flood training for local governments in the Kootenays. I am not aware of any other training for LGs planned, although there have been observer/assessor training sessions put on for MFLNRO staff. I would suggest yellow for this section, as not all regions have put on internal training.

Valerie

From: Peters, Neil J FLNR:EX
Sent: Tuesday, May 14, 2013 1:01 PM
To: Filmer, Cam A JAG:EX
Cc: Campbell, David FLNR:EX; Davidson, Glen W FLNR:EX; Pattle, John R FLNR:EX; Cameron, Valerie Z FLNR:EX; Cosman, Scott B FLNR:EX
Subject: RE: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Hi Cam – here are a few comments on two of the items you have assigned to me.

Lower Fraser Water Level Forecasts

FLNRO's Water Resources Engineer (Khalid Khan) is currently running the Fraser River Hydraulic Model and is receiving water level gauge data on the river from municipalities, FLNRO gauge readers etc. for approx. 70 gauges starting today. Because of the rapidly changing inflows due to the weather patterns over the past week and because of gaps in streamflow gauging for Lower Fraser tributaries, the model boundary conditions are somewhat uncertain for today. However, Khalid expects to be able to validate the model tomorrow and to provide the first prediction report by Thursday afternoon.

Lower Fraser River Non-Standard Dike Information

The information developed in 2012 can be used for this year. However, I will check with John Pattle to see what new insights might have been gained through recent assessment studies nearing completion for Barnston Island and Coquitlam Diking Districts as part of the *Drainage, Ditch and Dike Act* transition process.

Neil

Neil J. Peters, M.A.Sc., P.Eng.
Head, Flood Safety Section (provincial)
and Inspector of Dikes

Ministry of Forests Lands and Natural Resource Operations

Telephone: (604)586-4427

e-mail: Neil.Peters@gov.bc.ca

http://www.env.gov.bc.ca/wsd/public_safety/flood/fhm-2012/index.html

From: Filmer, Cam A JAG:EX

Sent: Tuesday, May 14, 2013 12:08 PM

To: Campbell, David FLNR:EX; Mason, Wenda FLNR:EX; Peters, Neil J FLNR:EX; Oakley, John JAG:EX; Loski, Carol JAG:EX; McCaffrey, Julianne GCPE:EX; Ritchie, Leanne GCPE:EX; Symonds, Brian FLNR:EX; Davidson, Glen W FLNR:EX; Cameron, Valerie Z FLNR:EX

Cc: Duffy, Chris D JAG:EX; Mohrmann, Ralph JAG:EX

Subject: CCG / PECC Readiness Items - Freshet 2013 Check - FLNRO WM related items

Hi everyone

Further to the CCG call late yesterday, please find some questions below on readiness. Green means everything is good, yellow that more pressing, red that there are major flags, and orange that needs confirmation.

Many of these items are carry-overs from previous years with heightened threat/risk levels.

Given we are late in the readiness year, this is more of a quick check, and in some regards a chance to document work done (or ongoing), or take off any items that are not required. As noted, is there anything also that needs support, or items that need to be added.

The items below are the ones that have FLNRO Water Management aspects.

If you could please reply to me with your specific item (and cc anyone else mentioned on your item), and how, if at all, you would like it reflected that would be appreciated.

Regards,

Cam

Dave / Wenda – okay with this one?

<input type="checkbox"/>	Confirmation of ongoing risk assessment by RFC	Spike in activity May 13	FLNRO – David Campbell	Ongoing
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Neil – still okay? I wrote as yellow, given importance – go with that, or green that okay?

<input type="checkbox"/>	Lower Fraser Water Level Forecasts	Available end of day May 16 (Thursday)	FLNRO – Neil Peters	
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Neil / JO / Carol – good on the latest intelligence on non-standard dikes? Sounds like same info as last year, and predominantly focused at SWE. Okay with saying good, and shifting to “green”

<input type="checkbox"/>	SWE Non-Standard Dikes Information	Confirm latest information	FLNRO – Neil Peters	TBC
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Dave / Wenda / Jules – recorded integrated flood threat messaging as good – green. Okay with that?

<input type="checkbox"/>	Confirmation of flood threat messaging and communications	- Possible joint requirements (inclusion of public safety messaging)	FLNRO / Julianne M	
<input type="checkbox"/>	Readiness of joint RFC and PECC/PREOC media messaging and interviews		FLNRO / Julianne M	

Wenda / Brian – good on dam safety and snow survey aspects. Do you require anything? Are they both “green”, or is there more urgent checks you want done?

<input type="checkbox"/>	Additional snow survey analysis as required		Brian S / Wenda M	Is this required?
<input type="checkbox"/>	Confirm Dam Safety Branch readiness	Is Dam Safety okay with state of preparedness?	Wenda M	Is this required?
<input type="checkbox"/>	Additional dam flyovers as required		Brian Symonds	Is this required?

Valerie / Wenda – okay for staffing?

<input type="checkbox"/>	Confirmation of RFC and water management staff	Is there adequate staff for public	Valerie Cameron	TBC
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capacity in the field

messaging, and
PREOC and PECC
support



Valerie / Neil – appreciating we are very late in the year – any requirements for flood preparedness workshops (either internal or to LGs). I can add what Neil mentioned yesterday about dike protection education aspects being added to the freshet website (FLNRO website?)

☐ Flood Preparedness
Workshops

Given timetables –
combine with others

Valerie Cameron
/ Kelli K

TBC for SWE?