metrovancouver

Barnston Island

Flood Response Plan

November 14, 2023

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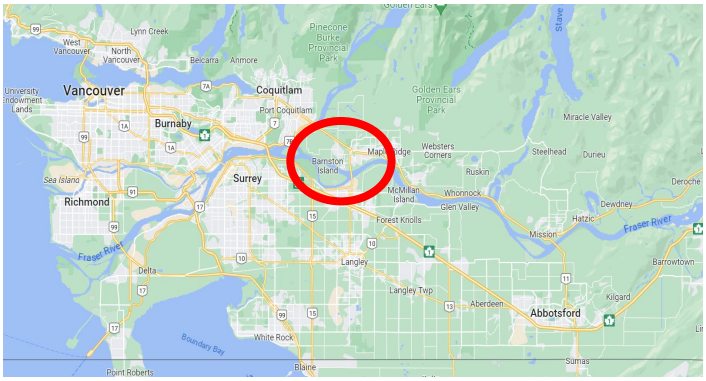
Barnston Island Community Profile

Governance

Most of Barnston Island is part of Metro Vancouver Electoral Area A; the remainder is Barnston Island Indian Reserve No. 3, which is outside Electoral Area A limits and is under the governance of the Katzie First Nation, headquartered across the river at their main reserve in Pitt Meadows. While the province has oversight of island diking authority, Metro Vancouver is not responsible for the dike.

Geography

The landmass of Barnston Island is approximately 628 hectares (6.28km², 2.43 square miles) with the Barnston Reserve measuring .58km². The island has no direct road access to the rest of the region; it is accessed through the free Barnston Island Ferry, a short 5-minute ferry route from Surrey on 104 Avenue across Parson's Channel of the Lower Fraser River.



Population

Barnston Island is home to a total population of 100-150 people (155 per 2001 census, 111 per Metro Vancouver datasets in 2022), 46 of whom live on the Barnston Island IR#3, located on the southeast part of the island.

Business & Industry

Barnston Island contains mostly farmland and in 2004, a group of landowners applied to the provincial Agricultural Land Commission to have approximately 85% of the land outside the Indigenous community removed from the Agricultural Land Reserve. On July 19, 2006 the Commission rejected the application. See Appendix C: Barnston Island Resident Business & Industry Listing.

Protective Structures

Island elevations range from 1-4m and without flood control structures much of the island would be routinely in undated. According to a Northwest Hydraulics report, the island is surrounded by a 10km ring dike that mitigate losses up to about the 40-year Fraser River flood. In most areas, this structure is topped by Dyke Road, the main island roadway. The report indicates that the structure is deemed in less than fair condition, is overly vegetated and the road pavement is in poor condition.

Transportation

Barnston Island is serviced by a “ferry” which is a ramp-equipped barge towed alongside by a light tugboat. **The vessel has a 40-ton capacity** and the service is contracted to Western Pacific Marine by the Ministry of Transportation & Infrastructure (MOTI). The ferry system has an angled wooden ramp on the south (Surrey) side, which is located at the foot of 104th Avenue in the Port Kells area of Surrey. The island “terminal is a concrete ramp; vehicles are required to back off of the ferry on the island side.

Ferry hours are: Mon - Thu from 06:00 – 2400hrs Fri – Sun 06:00 – 01:00hrs

School buses contracted by Surrey School District (SD36) service the island twice a day on school days – both for primary and secondary schools.

An analysis of contingency transportation is included in Appendix G: Transportation and Evacuation.

Critical Infrastructure

A listing of critical infrastructure is listed in Appendix A: Barnston Critical Infrastructure Data.

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For any updates or change that are needed to the plan, please send your comments and feedback by email to the Manager, Security & Emergency Planning. Please include your name, role, the recommended update or change, and the date that change will be in effect.

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BARNSTON ISLAND FLOOD PLAN

1.0 Introduction

1.1 Purpose of the Plan

Metro Vancouver Regional District has local authority responsibility for Barnston Island which is evaluated as a potential flooding risk. This plan is an addition to the Electoral A Emergency Plan and specific to a flood event. This plan is not intended to replace Electoral Area A Emergency Plan.

The purpose of this to act as a guide when water levels are at risk of flooding around the Barnston Island region. Historically the period of concern for Freshet occurs from late May through Late June. The Island has flooded on several occasions, in 1894, 1948 and to a lesser degree in 1972. Actual occurrence of flooding will be highly dependent on several factors including local weather during the Freshet and temperatures in the headwaters of the Fraser River Basin.

This plan shall be updated annually and be integrated into the Metro Vancouver Security & Emergency Management continual maintenance cycle and training plans. Following activation of the plan, a debrief will be held to capture any lessons learned and changes required to the plan. Changes will be adopted into the plan on an annual basis, or when it is critical to do so before.

1.2 Emergency Response Priorities

Metro Vancouver's Emergency Response Priorities are to:

1. Provide for the safety and health of all responders.
2. Save lives.
3. Reduce suffering.
4. Protect public health.
5. Protect infrastructure.
6. Protect property.
7. Protect the environment.
8. Reduce economic and social losses.

These priorities are issued to support in decision making through the response. These priorities adhere to those established by the Government of British Columbia as outlined in British Columbia's Emergency Management System (BCEMS).

1.3 How to use this Plan

This plan is made up of:

- ✓ A core document that explains terms, incident levels, notification procedures;
- ✓ Response protocols for each incident level; and
- ✓ Supplemental appendices and annexes (these can function as a stand-alone document).

Each section is designed for quick reference or for easy extraction from the plan.

1.4 Activation of this Plan

This Plan will be activated when:

- ✓ higher than normal snowpacks are present throughout the Province, and/or
- ✓ the Fraser River at the Mission gauge reads 5 meters and is projected to approach or exceed 6 meters, and/or
- ✓ there is increased risk of significant freshet flooding in the Fraser River Basin, and/or
- ✓ The River Forecast Centre has advised that precautions for flooding should be implemented throughout the Fraser Basin.

Late May through late June is historically the period of concern for Freshet in the region.

This plan is a guideline and evolving conditions may require some deviation from stated protocols.

Any variation from this plan will be at the discretion of the Metro Vancouver Incident Commander and/or EOC Director.

1.5 Key Assumptions made in this Plan

The following assumptions have been made when developing this Plan:

1. Metro Vancouver Protective Services & Emergency Management will act as Incident Command (or as part of Unified Command with Katzie First Nation) for a flood response at Barnston Island.
2. It is assumed that any physical mitigative activities such as dike reinforcement are the responsibility of the Barnston Island Diking Commission
3. The Barnston Island Diking Commission has an effective dike monitoring program as developed in preparation for potential flooding and that the plan has and/or will be reviewed and, as required, updated prior to the onset of the high risk period.
4. The Province of BC will inform Metro Vancouver of the current and forecast flooding risks.
5. Metro Vancouver will coordinate any required Emergency Social Services (ESS) response for displaced Island residents in conjunction with the City of Surrey who will be the receiving host community for evacuees.
6. When an order is issued by Metro Vancouver or the Province, Metro Vancouver is responsible for coordinating an evacuation, in collaboration with Surrey RCMP
7. Metro Vancouver will activate its Emergency Operations Centre (EOC) to coordinate response to the level needed; this may include elements of virtual engagement.
8. Metro Vancouver External Relations will activate its Emergency Communications Plan.
9. Metro Vancouver will provide, in concert with the Province, the necessary information to affected residents regarding preparation, response and recovery from a flood.
10. The Katzie First Nation (KFN) IR#3 on Barnston Island will be invited to coordinate or integrate into any planning and response with Metro Vancouver. As Local or Provincial States of Emergency do not apply to First Nations Lands, any action taken that affects Katzie will have to be communicated to the Katzie First Nation Council.

1.6 Document Storage, Maintenance and Distribution

As a subset of Electoral Area A Emergency Response Plan, this plan shall follow the guiding principles for document storage, maintenance and distribution set forth by that plan. For any changes required to the Plan, please email the Manager, Security & Emergency Management.

2.0 Understanding the Risk

Flooding on the Fraser River is a natural process. High water on the Fraser River occurs during spring freshet when the river runs high and carries vital nutrients to the ecosystems of its lower reaches.

Over 300,000 people live and/or work in Fraser River floodplain and over 2.7 million people across the region depend on infrastructure, including roads, public transit and utilities that can be impacted by floods. A single major river or coastal flood in the Lower Mainland in the coming decades could result in $20B - $30B in losses.

Anticipating response activities and potential consequences from flooding directly correlate to understanding and managing the hazard. To protect lives, property and infrastructure, 74 dike systems are operated by 35 diking authorities across the Lower Mainland. This network of approximately 600 km of dikes (125 km of sea dikes) protects approximately 75,000 hectares of land.

In accordance with Schedule 1 of the Emergency Program Act, the Ministry of Forests, Lands, Natural Resource Operations and Rural Development is designated as the lead ministry for flooding and any corresponding emergency plans and procedures and their implementation. Emergency Management & Climate Readiness BC is responsible for coordinating provincial emergency management activities. Metro Vancouver follows the incident levels or levels of notification set by the BC River Forecast Centre (RFC). The purpose of the RFC is to provide an analysis of snowpack, assess seasonal water supply & flood risk, and predicts flows in BC's rivers and streams. It produces a range of bulletins, maps and warnings to inform emergency managers and the public about current and upcoming streamflow conditions. River forecasting information for Barnston Island comes from multiple sources including, but not limited to those published by the RFC. The various models are sometimes contradictory and interpreting these can be challenging. Of greater complexity is understanding the conditions, triggers for action and potential consequences associated with the culmination of these various factors specifically at Barnston Island. Various datasets should be referenced as components of the overall conditions which may drive actions or consequences that include evacuation alerts and orders (and a declaration of state of local emergency), human and livestock evacuation and ferry viability.

2.1 Forecasting, Models & Considerations

Forecasting data sets and considerations include:

CLEVER: used by the BC River Forecast Centre, the Channel Links Evolution Efficient Routing (CLEVER) model provides 10 day real-time flow forecasts at selected locations in BC. Clever uses third-party data inputs and the data may be provisional and may include uncertainty and errors. The model may include its own errors and the actual observed discharges or water levels could differ from those forecasted. Actual flows could be higher or lower than the forecast; and users of this forecast are advised to accept all responsibility for its use and interpretation. When determining Fraser River flood potential, two Real-Time Hydrometric Data Graph factors are usually reported by the BC River Forecast Centre. These are:

- Lower Fraser River Flow Rate at Hope, BC which is modeled in cubic meters per second (m^3/s or cms)

- Measured in meters, the Mission Gauge (at Mission, BC) has historically been used as a reference for flood levels on the Fraser. This is partly because it's in the geographic centre of the Lower Fraser River system. It is generally the standard to which readiness and response activities are triggered.

FRASER RIVER AT MISSION	
FLOW (m^3/s)	LEVEL (m)
9700	5.50
10,600	6.00
12,100	6.50
14,400	7.00

FRASER RIVER AT HOPE	
FLOW (m^3/s)	LEVEL (m)
9000	5.50
11,000	6.00
12,000	6.50
13,000	7.00

Note: *Harrison River (Lillooet system) contributes an average of 800-1400 m^3/s.*

- Link to the map of the CLEVER Model 10-day Forecasts of Discharges and Return Periods
- http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

WARNS: The BC Flood Warning & Advisory Notification (WARNS) Model provides discharge and water level forecasts for the Fraser River and its major tributaries. During the spring freshet season the WARNS model is updated daily during business days, and on weekends during critical periods.

- WARNS Model Fraser River Flow Forecasts (PDF)
- http://bcrfc.env.gov.bc.ca/freshet/warns/2023_FraserForecast.pdf

COFFEE: The Coastal Fall Flood Ensemble Estimation (COFFEE) Model provides a 5 day real-time flow forecasts for select watersheds in coastal BC & Vancouver Island. It is updated when a rainfall event occurs during the autumn winter Storm season.

- Link to the map of COFFEE Model 5-day Forecast of Discharges and Return Periods
- http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html

Lower Fraser River Monitoring & Forecasting: The province provides regular water-level forecasts for the lower Fraser River:

- 10-Day Lower Fraser River Water Level Forecast
- http://bcrfc.env.gov.bc.ca/freshet/lower_fraser/LFR-10-DayFloodLevelForecasts.PDF

Precipitation: Variables including rainfall catchment area, quantities and freezing levels all influence the amount of runoff added to projected river levels. The land drained by the Fraser River and its tributaries is known as the Fraser River Basin. It is BC's largest, and Canada's fifth largest, watershed — 240,000 square km (roughly a quarter of the province). Any amounts in excess of 5-10mm over 24 hours can have influence and should be considered in conjunction with tides and gauge projections.

Tides: Barnston Island is situated in an area of the Fraser River which is subject to tidal influences which can significantly alter flood projections beyond river gauges and models. Further, the spring freshet flood threat on the Fraser River can coincide with some of the highest tides of the year. Often, these factors are not accounted for in river forecasts. Some interpretation is required by response personnel as high tides coinciding with high river levels and significant precipitation can affect local conditions and have the potential to influence established thresholds for actions and impacts such as ferry viability, evacuation, etc. High tides over 8 feet should be considered with river forecasts and precipitation as indicators of potential flooding and associated trigger points.

Local Knowledge: Barnston Island residents and the ferry crews have extensive historical and local knowledge. Ferry Captains should be consulted as projections near levels of concern and anticipated actions as to the viability of the ferry service. Locals also use a boulder with a Canadian flag painted on it 10m west of the ferry terminal as an indicator of concern when water reaches it.

When water hits the bottom of the flag, it is an indicator that evacuation alert triggers are imminent. This should be considered with forecast information and the model data indicated in this section regarding the initiation of alerts, warnings and associated activities.

Flag rock at 5.5m (Mission Gauge) with receding 12' tide

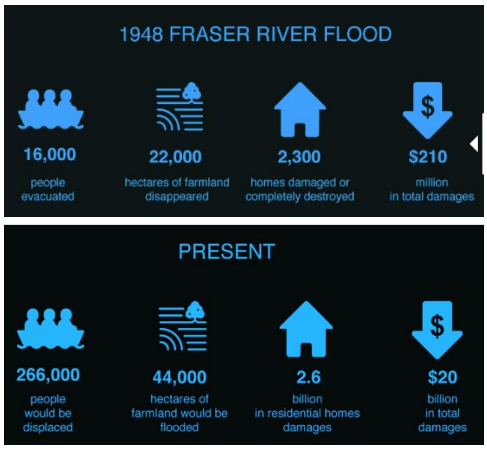
2.2 Historical Events

To provide perspective, historical events can provide insight into potential threats and impacts proposed by the Fraser River in a significant freshet flooding event. The Fraser River flood of 1894 is the largest of written record. Over the next half century, numerous dikes were built to protect development from periodic flooding. The second largest flood took place in 1948 – also in May – when several dikes failed or were overtopped. The magnitude of losses and disruption of a repeat would be much greater today. This data is provided courtesy of the Fraser Basin Council.

1894 Freshet: The largest flood on written record occurred in 1894 when development was sparse and so resulted in relatively little damage. In May 1894 during spring freshet, high water on the Fraser lasted six weeks. For 33 days the river level remained above an estimated 20-ft. level and for 17 days above the 24-ft. level. At its peak, the water level was estimated at 7.92 metres (nearly 26 feet) at Mission. Dikes and other river structures were overtopped or breached along the river.

In 1894 the river flooded more than 12,500 ha of low-lying land. It collapsed dikes, destroyed buildings and rose above its banks from May 25 to June 15. Another estimate put the area flooded by the Fraser River at more than 22,000 ha. The flood forced the evacuation of 16,000 people and damaged or destroyed 2,300 homes, several people drowned and many livestock perished.

1948 Freshet: On May 31, 1948 a provincial state of emergency was declared in BC. An order under the Militia Act gave the military authorities the power to conscript citizens and requisition transport. Flood waters severed the two trans-continental railway lines, inundated the Trans-Canada Highway, flooded urban centres and many industries were forced to close or reduce production.



Four thousand Canadian soldiers were involved in the rescue operations. Navy vessels and flood rescue trains picked up hundreds of stranded persons in the Fraser Valley. An estimated 7,500 volunteers helped to feed and care for workers and support evacuee centres and three emergency hospitals. By June 2, some 9,000 people were homeless due to flooding. Authorities estimated that 32,000 civilians and 1,500 service personnel took part in flood control and evacuation efforts. The “Battle of Fraser” was described as the greatest peacetime effort by Canada’s active and reserve navy, army and air forces.

3.0 Incident Levels

Note: *Information provided to the Metro Vancouver Incident Commander from Environment Canada and the BC River Forecast Centre is often raw data from multiple models provided from multiple subject-matter experts and is left to the interpretation of response agencies & local authorities. This data must be considered in conjunction with local knowledge and conditions.*

3.1 BC River Forecast Centre Incident Levels

The BC River Forecast Centre (RFC) uses three incident levels for notification. Metro Vancouver's threshold for each of these levels has been outlined.

Be advised, the official gauge for activation is the "Mission Gauge" located under Mission Bridge. **Due to tidal influence at Barnston Island local conditions may be higher downstream.**

The levels are as follows:

High Stream Flow/ Flood Advisory	✓ River levels are rising or expected to rise rapidly, but that no major flooding is expected. ✓ Minor flooding in low-lying areas is possible. ✓ **3.0 - 5.0 meters is Metro Vancouver's threshold for this level.**
Flood Watch	✓ River levels are rising and will approach or may exceed bankfull. ✓ Flooding of areas adjacent to affected rivers may occur. ✓ **At 5.0 meters and above predicted by the River Forecast Centre, Metro Vancouver will commence active monitoring of Parson's Channel (Port Kells Ferry Terminal Gauge) and Barnston Island.** ▶ **Under this stage, an Incident Command Post should be deployed to Port Kells Ferry Terminal and activate a Level-1 EOC.**
Flood Warning *Under Flood Warning, there are 4 stages:*	✓ River levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result. ✓ **Approaching 6.0 meters with forecasted increases in river levels Metro Vancouver may consider issuing an Evacuation Alert.** ✓ **At 6.2 – 6.5 meters, with a predicted rise over 6.7 meters Metro Vancouver may consider issuing an Evacuation Order.**
PHASE 1: ***Planning & Pre-Flood Preparation***	 Normal day-to-day operations for the province to monitor river levels, provide oversight to dam and dike owners, continue efforts in planning and exercises and provide for mitigation.
PHASE 2: ***Preparedness (Readiness)***	 Phase 2 occurs when flooding potential is possible. Special resources may be pre-positioned, advisories are prepared and active communication between local authorities and the province occurs regarding the potential for flooding. The local authority should ensure that their emergency operations centres (EOCs) are ready and staff are contacted; in addition, all related plans, including recovery plans are reviewed. Local authorities should provide public information about the risks of flooding and what

	individuals, families and businesses can do to be prepared. Dike authorities should actively monitor their flood protection works to ensure that such things as electrical connections are functional and that any gates or valves are operational and clear.
PHASE 3: ***Response***	 Phase 3 is described as when flooding is imminent to occurring or when an emergency response is initiated. Generally, this will occur when river stage (water height) is expected to reach or exceed stream channel capacity resulting in water threatening or impacting any people, property or infrastructure.
Under Phase 3, there are 3 phases: •*Flood Alert* •*Flood Order* •*All Clear*	▶ ***Flood Alert (Evacuation Alert) – STAGE 1*** ✓ This stage is automatic once phase 3 – response is reached. ✓ EOC / PREOCC will be open to a Level 1 and operation at minimum staffing levels with flexible operational hours to monitor the status of potential flooding. ✓ In the event of a sudden, local flood event it may be necessary to declare a local state of emergency to enact local extraordinary powers designated under the Emergency Program Act.
	▶ ***Flood Order (Evacuation Order) – STAGE 2*** Stage 2 occurs when there is a high probability of damage due to flooding. ✓ Full flood response or control programs are implemented due to severity of flooding. ✓ Mandatory evacuation is contemplated or ordered. ✓ The response structure moves to Activation Level 3 (fully staffed for 24/7operation, where there may be a declaration of a state of emergency or where large evacuations are imminent).
	▶ ***All Clear (Evacuation Rescind) – STAGE 3*** Stage 3 is realized when the threat of continued flooding has past, and evacuees may return to the flood area on a permanent basis. Outstanding issues such as building occupancy due to electrical problems or drinking water contamination may persist; however, people may proceed with cleanup activities.
PHASE 4: ***Recovery/ Disaster Financial Assistance***	 Phase 4 may be described as when the threat of flooding is over and the replacement and restoration of uninsured essential property to pre-event condition commences. This may include debris and gravel removal, that has not occurred under response. Incremental costs for a local authority's Recovery Centre under Community Disaster Recovery are administered under the Disaster Financial Assistance (DFA) Programs. Public information from EOC's, PREOCs and the PECC should be provided through public meetings, newspaper articles, web postings, etc. to residents of impacted areas about the health risks they may encounter, how to clean-up flood-impacted property and structures, how and where to go to access DFA information, and other sources to assist people in need.
	For more information on the various levels, please refer to the BC River Forecast Centre

4.0 Incident Notifications

Following the activation of this plan, key stakeholders, partners and Metro Vancouver supporting staff shall be notified of its activation.

Notifications shall be made via Metro Vancouvers Alert system, **Alertable**, and/or by using the phone-tree system combined with email distribution.

The Security & Emergency Management team or designate, will issue the alerts and notifications. When a command-and-control structure or incident management structure has been established, notifications will be delegated to the appropriate response function. Protocols for the use of the mass notification system are not included in this plan.

4.1 Stakeholder Notifications

It is recommended the following stakeholders be notified, but are not limited to:

Internal Departments:

- ✓ Metro Vancouver Executive
- ✓ Metro Vancouver EOC Team
- ✓ Metro Vancouver Parks
- ✓ Metro Vancouver Watershed Protection

External Agencies:

- ✓ Emergency Management & Climate Readiness BC
- ✓ Katzie First Nation
- ✓ Ministry of Transportation & Infrastructure
- ✓ City of Surrey
- ✓ Surrey RCMP
- ✓ Surrey School District

Island Stakeholders:

- ✓ Island residents (verify Katzie residents informed by Katzie Nation
- ✓ Island businesses
- ✓ Mills & businesses in Port Kells

As circumstances dictate:

- ✓ Vancouver Fraser Port Authority

For the latest stakeholder contact information, visit Appendix D: Emergency **and Agency** Contacts

5.0 Incident Management Structure and Response Protocols

In the event of, or preparation for, a flood event at Barnston Island, Metro Vancouver will establish an Incident Management System to support with preparation, response and recovery to the event. The ICS will expand and collapse at the discretion of the Manager, Security & Emergency Management or delegate and a Task Number shall be requested.

Task Number

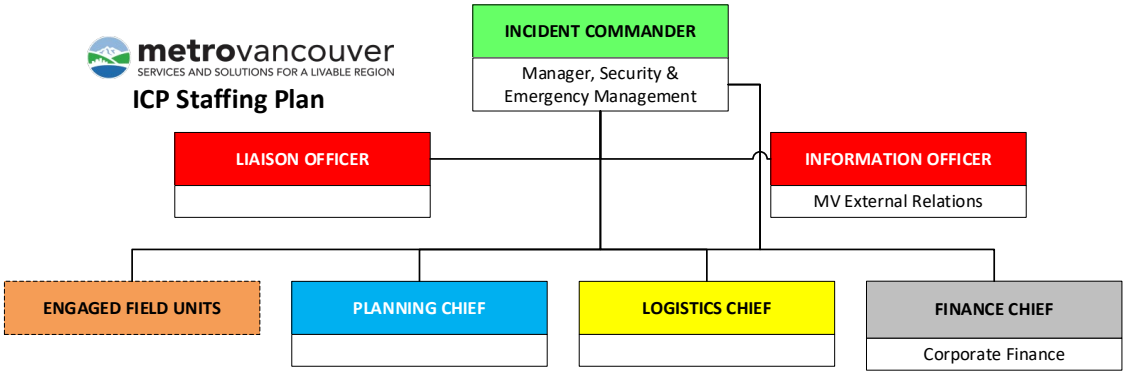
A task number is issued by the Provincial Emergency Management Office for cost recovery of emergency expenses by a municipality or region. The task number ensures proper notification of the emergency, tracking and financial authorization. At the time this plan was written, there was 100% cost recovery for response and 80% cost recovery for recovery.

To be issued a task number at the start of a response call:

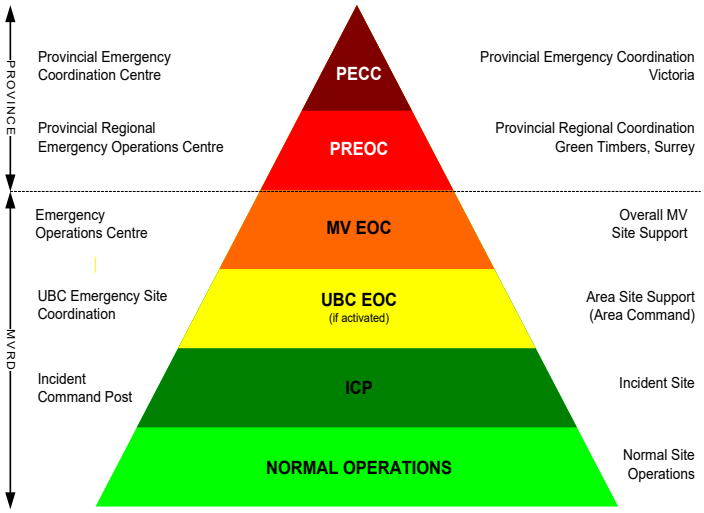
EMBC Emergency Operations Centre (1-800-663-3456).

Incident Command Structure (ICS)

This system may be established on the ground at Barnston Island and reporting into the Metro Vancouver EOC. A basic structure may look similar to the graph below:



The Incident structure used will fall into the overall incident reporting structure of Metro Vancouver:



METRO VANCOUVER RESPONSE PROTOCOLS

5.1 RESPONSE PHASE 1: Planning & Pre-Flood Preparations

TRIGGER:

- ✓ March Annually: Monitor snowpack data and consider sandbag requests for Province.
- ✓ April Annually Seasonal readiness activities begin to be coordinated by Metro Vancouver Security & Emergency Management. Departmental coordination and stakeholder engagement also to begin in April.

ANTICIPATED ACTIONS:

Under the guidance of Metro Vancouver's Manager of Security & Emergency Management, or designate, Metro Vancouver may conduct the following activities in their preparedness:

EOC Director	☐ Gather information
	☐ Consult with Katzie First Nation representatives
	☐ Consult with Emergency Management & Climate Readiness BC (EMCR), BC Ministry of Environment (MoE), Ministry of Transportation & Infrastructure (MoTI) and other Provincial Authorities
Liaison Officer	☐ Consult with the Barnston Island Ferry Contractor
	☐ Consult with the Barnston Island Diking District
Operations	☐ Check tiger dams, sandbagging equipment and supplies (OPS)
	☐ Check Flood & Spill Response Trailers condition and supplies (pumps, generator, etc) (OPS)
	☐ Inspect IC Trailer condition and functionality (OPS)
	*See Appendices for support – Appendix H: Sandbagging Guidance
Info Team	☐ Resident & business notification and the provision of information on Flood Preparations and Recovery
SEM Team	☐ Update the Barnston Island Freshet Plan (this Plan) and validate of contacts, resource availability and other dynamic information (SEM Team)
	☐ Consult and integrate planning with local response agencies, including Surrey RCMP and Emergency Support Services (ESS)

Note: *Where an ICS structure is not established, these activities will be carried out by the Security & Emergency Management Team under the guidance of the Manager, or designate.*

INFORMATION LINKS:

- River Forecast Centre
  http://bcrfc.env.gov.bc.ca/
- Mission Flood Gauge
  https://wateroffice.ec.gc.ca/report/real_time_e.html?stn=08MH024,,,
- Tides and Currents
  http://www.waterlevels.gc.ca/eng/station?sid=7654
- Emergency Management & Climate Readiness BC
  https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery

5.2 RESPONSE PHASE 2: Preparedness & Readiness

TRIGGER:

- ✓ When snowpack data, weather forecasts and subject-expert input indicate that a significant freshet is expected on the Fraser River system and/or;
- ✓ **5.0 meters on the Mission gauge,** and are expected to approach or exceed 6m, and/or
- ✓ As recommended by the Manager of Security & Emergency Management, or designate, regarding the initiation of preparedness and readiness activities.

ANTICIPATED ACTIONS:

EOC Director	☐ Establish an Incident Management Structure to support with response coordination ☐ Establish an Level-1 EOC and begin active monitoring of the event ☐ Deploy an Incident Commander and establish an Incident Command Post at Port Kells
Liaison Officer	☐ Initiation of coordination calls engaging multi-department/EOC personnel in information sharing and/or readiness activities ☐ Engage the diking district, road contractor and Katzie nation to coordinate dike patrols and coordinate situational awareness regarding island conditions and dike integrity ☐ Contact the Port of Vancouver Operations Centre and request the implementation of a "slow bell (speed restriction) as vessels pass Barnston Island (main river & Parsons Channel) as engineering reports indicate that vessel wash is a contributor to dike erosion at high water.
Planning	☐ Formal action plans, situation reports, resource tracking and radio communications initiated
Operations	☐ Pre-positioning and staffing of the Metro Vancouver Incident Command Post trailer in proximity of the Barnston Island Ferry mainland terminal → See Appendix F: Incident Command Post & Communication ☐ Based on conditions and the urgency of the situation, additional activities may include: ○ Mobilization and pre-positioning of such resources as sand, sandbags, sandbag filling machines, earth moving equipment, dump trucks, Tiger dams and otherwise on Island or in an established staging area adjacent to or near the Metro Vancouver Incident Command Post. ○ Notification and/or mobilization of the Metro Vancouver Watershed Protection personnel to initiate sandbag filling for use by residents.
Information Officer	☐ Engaging Corporate Communications to generate public information readiness messages targeting Barnston Island residents, businesses and the transient population of those recreating on the island. Public information sessions may be coordinated for Island residents
Finance	☐ Establish and review SOA Contractors and POs for response season

Note: *Where an ICS structure is not established, these activities will be carried out by the Security & Emergency Management Team under the guidance of the Manager, or designate.*

METRO VANCOUVER RESPONSE PROTOCOLS

5.3 RESPONSE PHASE 3: Response Coordination

STAGE 1 FLOOD ALERT / EVACUATION ALERT

TRIGGERS:

- ✓ **Approaching 6.0 meters with forecasted increases in river levels Metro Vancouver may consider issuing an <u>Evacuation Alert,</u>** and/or;
- ✓ When 104th Avenue, Surrey access road, is in danger of inundation and/or;
- ✓ When the Province has issued a regional Flood Alert as per the BC Flood Plan and/or;
- ✓ Other circumstances come to light.

ANTICIPATED ACTIONS:

EOC Director	☐ Implement Emergency Management Plan for Electoral Area A ☐ Determine if a "State of Local Emergency" is required ☐ Request a provincial Task Number (1.800.663.3456) for cost recovery ▶ If a State of Emergency has been declared or is anticipated to be declared, inform EMCR. ☐ Metro Vancouver informs Katzie First Nation of the Declaration and acquired authorities and seeks to ensure consistency of application of authorities between island jurisdictions and the coordination of efforts. ☐ Metro Vancouver Incident Command directs the issuing of the Evacuation Alert to residents. ▶ This may be facilitated by mass notification system, door-to-door by RCMP/Metro Vancouver Staff and/or by a resident information "town hall" meeting.
Operations	☐ Establish site security for ICP and Barnston Island assets ☐ When Metro Vancouver declares a State of Local Emergency, work to: ▶ Restrict Access – the requirement to limit island access to residents and workers only so that any resident evacuation or livestock movement – minimize transient traffic to the island. ▶ Direct Evacuation - to facilitate a timely evacuation, either due to imminent threat to life safety or as a precautionary measure as the ferry service is threatened and may become an impediment to a safe and effective evacuation. This authority can also assist in ensuring that the evacuation of animals does not impede human evacuation. ▶ Construct works which may include dike access, removal of water, etc.
Planning	☐ Ensure appropriate reporting requirements are met
SEM Team	☐ Mobilize and staff the Metro Vancouver Incident Command Post trailer in proximity of the Barnston Island Ferry mainland terminal

METRO VANCOUVER RESPONSE PROTOCOLS

STAGE 2: FLOOD ORDER / EVACUATION ORDER

TRIGGERS:

An evacuation order is one of the powers acquired under a Declaration of State of Local Emergency. Conditions which may trigger consideration of an evacuation order, include but not limited to:

- ✓ River levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result and/or;
- ✓ **At 6.2 – 6.5 meters, with a predicted rise over 6.7 meters Metro Vancouver** and/or;
- ✓ If significant seepage through the dikes is observed that poses a threat of failure and/or;
- ✓ If a portion of the dike has failed or been overtopped and/or;
- ✓ When the Province has ordered a Flood Order as per the BC Flood Plan.

ANTICIPATED ACTIONS:

EOC Director	☐ Metro Vancouver EOC activated at Level 2 to support Incident Command, field operations, critical infrastructure and other Metro Vancouver sites at potential risk from flooding
Incident Commander	☐ Maintain frequent communication with EOC, Deputy Commissioner and the Director of Safety, Security & Emergency Management ☐ Informs Katzie First Nation of the Declaration and impending Evacuation Order and seeks to ensure consistency of application of authorities between island jurisdictions and the coordination of mitigation and response efforts ☐ Incident Commander orders evacuation of any remaining livestock and persons from the island, residents advised of evacuation order ▶ See Appendix G: Traffic & Evacuation Considerations for support
Liaison Officer	☐ Support Incident Commander to direct displaced personnel to engage the City of Surrey to assist with the provision of Emergency Support Services ☐ Air and marine strategies may be required to supplement evacuation, move responders and/or resources or to effectively sweep the Island for stranded residents. ▶ See Appendix G: Traffic & Evacuation for multi-model options
Planning	☐ Ensure appropriate reporting requirements met – status reports will be needed each operational period for Management & Elected Officials
Operations	☐ Work with RCMP to coordinate the Evacuation Order and security patrols ☐ Restrict Island traffic to Emergency Personnel only – implement permit system to ensure only justified and authorized have island access ▶ For support, see Appendix G: Traffic & Evacuation Considerations ☐ Begin livestock evacuation – work with Ministry of Agriculture and EMCR

	☐ Establish patrols of the dikes in areas at risk of, or areas of, flooding ☐ Establish daily patrols of the island by vehicle, boat or air to determine water levels, damage and environmental hazards, if flooding has occurred. ▶ For support, see Appendix A: Barnston Island Hazardous Materials Assessment Data.
Information Officer	☐ Draft and issue any media statements and support with media requests ☐ Support with drafting any notifications to residents and persons affected
Finance	☐ Support EOC and site in financial tracking and processing ☐ Support with financial reporting and justifications requested/needed

**All other incident positions to support the EOC Director / Incident Commander as required.*

METRO VANCOUVER ALL CLEAR PROTOCOLS

STAGE 3: ALL CLEAR / EVACUATION RESCIND

TRIGGERS:

- ✓ When the Province advises Metro Vancouver that the river has reached its peak and is beginning to recede and/or;
- ✓ When water level has lowered to a point that no longer presents a hazard to people, property and/or the environment and/or;
- ✓ At the recommendation of the Manager, Security & Emergency Management based on available data and forecasting.

ANTICIPATED ACTIONS:

EOC Director	☐ Draft the Rescind of Declaration of State of Local Emergency and any enacted evacuation orders or alerts ▶ Get approved by the Board of Directors and signed by the Metro Vancouver Commissioner or Deputy Commissioner ☐ Carry-out demobilization checklist (see next section) ☐ Begin preparation of Debrief, After-Action Review and Lessons Learned ☐ Review and update plans based on After Action Report and recommendations
Incident Commander	☐ Informs and works alongside Katzie First Nation in the removal of State of Local Emergency and any evacuation alerts and orders ☐ Coordinate with MOTI & ferry operator to ensure island access restrictions are removed and return to normal scheduled service
Operations	☐ Begin damage assessments including assessments of structures, infrastructure and MV Parks assets and property ▶ Coordinated by Metro Vancouver Security & Emergency Management ▶ Work with Regional Parks to assess park damage ▶ Fraser Heath Authority to conduct assessment of potable water and possible contamination from NW Langley WWTP (if inundated) and local septic system overflows ☐ Work with the restoration of utility infrastructure, if impacted ☐ Begin program to mitigate likely mosquito breeding area with residents (within limitations of current policy on mosquitoes) ☐ Support EOC Director in carrying out demobilization checklist, including: ▶ Return all equipment (generators, heavy equipment, etc.) to service providers (LOGS) ▶ Demobilize and return all Metro Vancouver equipment (Tiger Dams, ICP trailer, etc.) to storage (OPS)

Information Officer	☐ Drafts and issues approved messaging related to the removal of order to inform residents – use various methods may include news media, social media, signage, and others. ☐ If DFA is approved, Incident Command/Metro Vancouver Security & Emergency Management engage MV External Relations to message eligibility and application process to impacted Island residents, farms and businesses. ☐ If Disaster Financial Assistance is approved, message approved eligibility and application process to impacted Island residents, farms and businesses.
Finance	☐ Determine Disaster Financial Assistance (DFA) eligibility. If eligible, work with Manager, Emergency Management to submit an application. ☐ Supports with response claims of persons affected.

**All other incident positions to support the EOC Director / Incident Commander as required.*

6.0 Demobilization

Demobilization is the process of ramping down following a response activation. Depending on the level of the response and the severity, demobilization may last anywhere from a few hours to several weeks. Demobilization is one of the most commonly forgotten areas in response but it is one of the most critical. A proper demobilization plan ensures that items are returned, tracked and remain in good working order, preparing the region to respond to the next event.

Tasks for demobilization may include, but are not limited to:

- ❑ Create a demobilization plan and establish demobilization timeline and project plan
- ❑ Notify partners and stakeholders of the event status change and demobilization process
- ❑ Collect any loaned equipment and check whether it is working – replace any unrepairable
- ❑ Schedule any servicing or maintenance needs on materials before returning to home location
- ❑ Ensure all forms are accurately completed and filed (paper and virtual)
- ❑ Update any contact lists with new partner or stakeholder information
- ❑ Shut down and reset/restock the Emergency Operations Centre (or areas used for operation)
- ❑ Complete post-incident reports, files and evaluations
- ❑ Follow-up with personnel engaged in response to ensure doing well and self-care plan is in place
- ❑ Complete all payment and payout obligations – establish a long-term DFA team if required
- ❑ Schedule critical incident debrief (if needed), after action report(s), and debriefs

See Appendix F: Incident Command Post & Communications for further details on demobilizing.

7.0 Continual Maintenance

This plan shall be updated annually and be integrated into the Metro Vancouver Security & Emergency Management continual maintenance cycle and training plans. Following activation of the plan, a debrief will be held to capture any lessons learned and changes required to the plan. Changes will be adopted into the plan on an annual basis, or when it is critical to do so before.