

# AGENDA

## *COUNCIL WORKSHOP*

**Monday, October 26, 2020**

**5:00 p.m.**

**Council Chambers, Municipal Hall**

**355 West Queens Road,**

**North Vancouver, BC**

**Council Members:**

Mayor Mike Little

Councillor Jordan Back

Councillor Mathew Bond

Councillor Megan Curren

Councillor Betty Forbes

Councillor Jim Hanson

Councillor Lisa Muri



NORTH VANCOUVER  
DISTRICT

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## COUNCIL WORKSHOP

5:00 p.m.  
Monday, October 26, 2020  
Council Chambers, Municipal Hall,  
355 West Queens Road, North Vancouver

### AGENDA

#### 1. ADOPTION OF THE AGENDA

##### 1.1. October 26, 2020 Council Workshop Agenda

*Recommendation:*

THAT the agenda for the October 26, 2020 Council Workshop is adopted as circulated, including the addition of any items listed in the agenda addendum.

#### 2. ADOPTION OF MINUTES

##### 2.1. September 28, 2020 Council Workshop

p. 7-14

*Recommendation:*

THAT the minutes of the September 28, 2020 Council Workshop meeting are adopted.

#### 3. REPORTS FROM COUNCIL OR STAFF

##### 3.1. Draft North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy

p. 17-58

File No. 11.5225.01/023.000

Joint Report: Section Manager – Engineering Design & Planning and Community Planner, October 13, 2020

Attachment 1: Public Engagement Summaries

Attachment 2: Presentation

*Recommendation:*

THAT the October 13, 2020 joint report entitled Draft North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy is received for information;

AND THAT the North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy is referred to a Regular Meeting of Council for consideration.

##### 3.2. 2021 Financial Plan Workshop

p. 59

File No.

Materials to be circulated via agenda addendum.

**4. PUBLIC INPUT**

(maximum of ten minutes total)

**5. ADJOURNMENT**

*Recommendation:*

THAT the October 26, 2020 Council Workshop is adjourned.

# MINUTES

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**DISTRICT OF NORTH VANCOUVER  
COUNCIL WORKSHOP**

Minutes of the Council Workshop for the District of North Vancouver held at 7:02 p.m. on Monday, September 28, 2020 in the Council Chambers of the District Hall, 355 West Queens Road, North Vancouver, British Columbia.

**Present:** Mayor M. Little  
Councillor J. Back  
Councillor M. Bond  
Councillor M. Curren  
Councillor B. Forbes  
Councillor J. Hanson  
Councillor L. Muri

**Staff:** Mr. D. Stuart, Chief Administrative Officer  
Mr. D. Milburn, General Manager – Planning, Properties & Permits  
Ms. T. Atva, Manager – Community Planning  
Mr. J. Gordon, Manager – Administrative Services  
Ms. J. Paton, Manager – Development Planning & Engineering  
Mr. D. Veres, Senior Planner  
Ms. J. Simpson, Confidential Council Clerk  
Ms. C. Archer, Clerk Typist 3 – via Webex  
Ms. S. Clarke, Customer Service Clerk – via Webex

**Also in**

**Attendance:** Hesam Deihimi, Bruce Crowe - The Rental, Social and Affordable Housing Task Force

Via Webex: Derek Holloway, Heather Fowler, Katherine Fagerlund, Keith Collyer, Michael Sadler and Phil Dupasquier - The Rental, Social and Affordable Housing Task Force

**1. ADOPTION OF THE AGENDA**

**1.1. September 28, 2020 Council Workshop Agenda**

**MOVED by Councillor FORBES  
SECONDED by Councillor BACK**

THAT the agenda for the September 28, 2020 Council Workshop is adopted as circulated.

**CARRIED**

**2. ADOPTION OF MINUTES**

**2.1. July 13, 2020 Council Workshop**

**MOVED by Councillor MURI  
SECONDED by Councillor BOND**

THAT the minutes of the July 13, 2020 Council Workshop meeting are adopted.

### 3. REPORTS FROM COUNCIL OR STAFF

#### 3.1. Rental, Social and Affordable Housing Task Force: Interim Report

File No. 01.360.20/078.000

Mayor Little introduced the Housing Task Force and explained the purpose of the workshop.

The Rental, Social and Affordable Housing Task Force Chair introduced their members and provided an overview of the report, highlighting the following:

- The purpose of the task force:
  - Retention and maintenance of rental buildings, social housing and affordable housing, such as older strata buildings;
  - The housing continuum;
  - Tenant relocation policies;
  - Providing housing diversity;
  - Housing definitions; and,
  - Partnerships;
- Introduced the Official Community Plan (OCP) established in 2011 and commented on the success of the implementations to date;
- Discussed the four major demovictions in the District and mentioned the reduction of rental replacement units as a result:
  - Maplewood Plaza;
  - Emery Village;
  - Mountain Court; and,
  - Canyon Springs;
- Presented a graph displaying the average vacancy rates for the Metro Vancouver municipalities, stating that the District of North Vancouver struggles with a lower vacancy rate than is considered healthy;
- Expressed the number of new occupancy permits issue since the OCP was adopted; and,
- Expressed the number of new non-market housing units developed.

The task force detailed the following recommendations raised in the Interim Report:

- Staff resources;
- Lands and process;
- Funding and partners;
- Regulations; and,
- Tenant Impacts.

Mayor Little began the conversation commending the efforts of the task force, and further clarified that the OCP focuses on estimates, rather than targets.

Council expressed support of the statistics and facts that were provided in the report, confirming the need to keep the data updated and available.



Council questioned if the task force discussed the conflict of retention versus renewal in urban town centres, in regards to preserving and retaining older, less expensive rental homes.

In response to a question from council, the task force members stated the following:

- The majority of the District's affordable rentals consist of secondary suites;
- The importance of ensuring the existing community members are protected; and,
- Identified recommendations for the Residential Tenant Relocation Assistance Policy.

Council questioned if the task force discussed the issues around maintenance and retention of older buildings, and tailoring tenant protection and maintenance in order to preserve lower rental rates.

In response to a question from council, the task force members addressed the following:

- Commented on respecting the OCP in terms of town centres;
- Mentioned the Standards of Maintenance Bylaw;
- Prioritizing maintenance and retention of purpose-built multi-unit rental buildings in consideration of applicable town centre plans, objectives and policies; and,
- Explained a recommendation to create a registry or matrix of existing purpose-built multi-unit rental buildings and prioritize the retention of these existing buildings that are outside of town centres.

Council spoke to the demovictions as a result of new developments and continued the discussion with the following:

- Stated that the intentions of the OCP policies did not produce what they meant to;
- Stated that the improvement of town centres outlined in the OCP increased prices and decreased affordability;
- Commented on the report's acknowledgement of the Tsleil-Waututh Nation producing affordable housing in the District; and,
- Questioned what the rental rate is right now.

In a response to a question from council, staff advised that the Canada Mortgage and Housing Corporation (CMHC) does a survey every October on rental rates and is published a few months afterwards.

Council proceeded in discussion noting:

- Tourism and the rental market have decreased due to COVID-19;
- Expressed interested in knowing future rental rates;
- Illuminated the issue of non-restrictions in rental units;
- Questioned if the non-restrictions have increased prices;
- Questioned the percentage of multi-family units used for short-term rental versus long term;

- Expressed interest in the valuation and percentage of availability of rental on First Nations land;
- Requested an update on the challenges that BC Housing faces in their approval processes; and,
- Commented on the increase in valuation in regards to affordability and the increase in the number of renters in the District.

The task force members detailed one of the reports recommendations being for the District to establish stronger working relationships with First Nations and BC Housing.

The task force members spoke to the changes that COVID-19 has generated:

- Housing values have increased by 7%;
- Rental rates have decreased; and,
- Spoke to the difficulties of predicting what will happen in the development industry.

Council noted that secondary suites are a significant source of affordable housing in the District, but are underutilized.

In a response to a question from council, the task force members spoke to the issue of secondary suites and the change in the Residential Tenancy Act.

Council recommended contacting Hollyburn Family Services Society in regards to their roommate registry to explore different opportunities.

In a response to a question from council, staff confirmed that the secondary rental market, or investment properties, makes up approximately twenty percent across the region.

Council spoke to renter's need for long-term security and addressed the following:

- The gap between renters median income versus the District's median income;
- Appreciated that the environmental aspect was looked at through an economic lens in the report;
- Suggested buying hotels to avoid demovictions;
- Expressed interest in looking into the Whistler Housing Authority model; and,
- Appreciated that renters with pets were considered in the report.

Council spoke in support of the recommendation for good partnerships and questioned how it could be improved upon in the future.

In a response to a question from council, the task force members spoke to the need for establishing stronger working relationships and suggested appointing someone to identify those partners.

Council questioned if the task force addressed the varying dates of data and if they could be aligned better in the future.

In a response to a question from council, the task force members agreed with the difficulty of getting correlated data and that it is being addressed as an ongoing issue.

Council commented on the median income in the District being skewed and suggested the Metro Vancouver median income be used instead to calculate prices.

In a response to a question from council, the task force members expressed the difficulty with calculating rents, along with how affordability should be defined in the District.

Council questioned if there was any discussion around rent-to-own properties.

In a response to a question from council, the task force members stated that their mandate was to focus on rental, social and affordable housing, however, there is a continuum with rent-to-own so this can be looked into further.

The task force members spoke to the District partnering with BC Housing and CMHC in regards to developing properties which can maintain lower rental rates. Additionally, it was suggested to be more creative with the types of housing.

The task force members commented on providing more options for residents subject to demovictions.

Council commented on demographic data in regards to income, noting the following:

- The median income is more stable in town centres with multi-family developments, compared to single-family homes;
- Spoke to defining affordability;
- Commented on finding out who is in need of housing, rather than just looking at the median income, and driving council decisions towards which housing types are in greater need;
- Spoke to security of tenure and minimizing tenant impacts; and,
- Questioned the security of tenure on secondary markets.

In response to a question from council, it was stated that the task force members has not specifically focused on this issue, however, mentioned that one of the biggest reasons people purchase houses is to avoid eviction.

Council commented on the desire to strengthen the Residential Tenant Relocation Assistance Policy and questioned the discussion of compensation for relocations.

In a response to a question from council, the task force members noted the difficulty of coming to a consensus on appropriate compensation, however, they will research this further.

Council questioned what discussions were had regarding rental-only zoning.

In a response to a question from council, staff stated that there are some municipalities that have done differing degrees of rental tenure zoning.

Council questioned the BC Building Code change in regards to secondary suites.

The task force members stated that the task force will review the scope of how secondary suites are used.

In a response to a question from council, staff stated that a key change in the BC Building Code regarding secondary suites was the removal of maximum floor area.

Council commented on looking at this through the lens of sustainability and how housing and affordability may differ between demographic cohorts.

In a response to a question from council, task force members said District staff has provided substantial support and resources and encourages council to continue providing feedback and direction.

Council continued its discussion highlighting the following:

- Supported reducing restrictions for renters with pets;
- Suggested gentle densification in single-family neighbourhoods;
- Commented on secondary suites in regards to affordability;
- Spoke to the Standards of Maintenance Bylaw in regards to maintaining older buildings, rather than letting them become a tear down development;
- Commented on revisiting the relocation policy;
- Supported the rent-to-own model and partnering with Habitat for Humanity;
- Mentioned that current applications are using 2018 rental rates to determine below market rental, however, rates were much higher then;
- Questioned what will happen when the short-term rental market returns after travel restrictions due to COVID-19; and,
- Questioned if the value of a strata would decrease if restrictions on rentals were removed.

In response to a question from council, the task force members stated that it is very difficult to discern if removal of restrictions on rentals would decrease the value of a strata and that a strata council is responsible for whether rentals are allowed in the building.

Council noted its policy where the District does not allow restrictions on rentals in new strata buildings, which is put in place during the rezoning process.

The task force members expressed their preference for rental-only zoning and suggested finding sites to rezone and put in place covenants to specify the proposed market rate.

Council spoke to the high valuation of land in the District due to location and attractiveness, and suggested looking at land values of current social housing properties for further evaluation.

Mayor Little mentioned the appeal in the real estate market to note that rentals are allowed on listings.

Council commented on the high rental prices in some multi-family properties in regards to finding a new home when being displaced.

Mayor Little spoke to the unequal and unfair application of the Residential Tenant Relocation Assistance Policy in some demoviction cases.

Council continued discussion with the following points:

- Spoke to COVID-19 impacting some people more than others and the impact that is forthcoming due to the pandemic;
- Spoke to the lack of childcare space availability and supports adding this to affordable housing projects;
- Expressed interest in seeing size variations between new single-family homes and multi-family developments;
- Commented on foreseeable policy and land use planning changes in correlation with the climate, ecological and equity crises;
- Suggested that duplexes should be reconsidered;
- Advocated for new building techniques and suggested identifying the barriers these may present;
- Questioned the number of tenants currently living in the District that are at risk of being displaced; and,
- Spoke to the amount of people that will be disproportionately affected as a result of COVID-19.

Mayor Little questioned how childcare was considered as being an affect on affordability.

In a response to a question from council, the task force members spoke to the barriers and delays that the current development regulations present.

Council questioned if the task force was thinking in terms of leveraging District-owned lands and their sale for social and affordable housing.

In a response to a question from council, the task force members stated that staff provided a document with a list of District-owned lands which started the conversation for determining which lots would be suitable for affordable housing. The inventory was examined for location and proximity to services.

The task force members stated that the number one recommendation would be to appoint a staff member to be in charge of managing all of these issues.

Council suggested the use of alternative homes, such as tiny homes and recreational vehicles. Additionally, both single-family and multi-family homes should be considered when determining value as to whether a property can be rented or not.

Council continued its discussion, commenting on the following points:

- The District's outdated regulations for single-family homes in regard to size;

- Suggested work force housing and evaluating its challenges; and,
- Spoke to the level of enforcement that the District can exercise in respect of the Standards of Maintenance Bylaw and suggested speaking with the provincial government.

The task force members identified that affordability was not a primary topic when the OCP was being drafted in 2009. However, in 2015 prices started greatly appreciating, increasing awareness of, and the need for, affordability.

**MOVED by Councillor BOND**  
**SECONDED by Councillor MURI**

THAT the September 10, 2020 report of the Senior Community Planner entitled Rental, Social and Affordable Housing Task Force: Interim Report is received for information.

AND THAT staff report back to Council on the immediate action items recommended in the report.

**CARRIED**

**4. ADJOURNMENT**

**MOVED by Councillor CURREN**  
**SECONDED by Councillor BOND**

THAT the September 28, 2020 Council Workshop is adjourned.

**CARRIED**  
(9:10 p.m.)

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Mayor

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Municipal Clerk

## REPORTS

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AGENDA INFORMATION	
<input checked="" type="checkbox"/> Council Workshop	Date: October 26, 2020
<input type="checkbox"/> Finance & Audit	Date: _____
<input type="checkbox"/> Advisory Oversight	Date: _____
<input type="checkbox"/> Other:	Date: _____

	
Dept. Manager	GM/ Director
	CAO

for GS

## The District of North Vancouver REPORT TO COMMITTEE

October 13, 2020

File: 11.5225.01/023.000

**AUTHOR:** Stephen Bridger, Section Manager Engineering Planning and Design  
Nicole Foth, Community Planner

**SUBJECT:** **Draft North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy**

### RECOMMENDATION:

THAT the report entitled "Draft North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy" dated October 13, 2020 is received for information;

AND THAT the Committee refers the North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy to a Regular Meeting of Council for consideration.

### REASON FOR REPORT:

This report presents the draft North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy (SLR Strategy), and a summary of the focused, follow-up public engagement on the draft SLR Strategy that was held in September 2020.

### SUMMARY:

Sea level rise is inevitable according to international scientists<sup>1</sup>. It is expected to increase over time such that the consequences are significant without adaptation. The District of North Vancouver (DNV) has an opportunity to proactively address significant impacts as presented in the draft SLR Strategy. The draft SLR Strategy seeks to prepare the DNV for early action to plan and adapt. It will help increase our resiliency by reducing long-term costs through risk-based asset management, proactive environmental management, and enhanced public safety systems.

The draft SLR Strategy also enhances the DNV's understanding of vulnerabilities to coastal flooding due to sea level rise on the North Shore. Six priority next steps are highlighted for the DNV and the project partners. These priority steps focus on continued adaptation planning and managing potential risks.

<sup>1</sup> Intergovernmental Panel on Climate Change: Climate Change 2014: Synthesis Report.

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Sea level rise, and the DNV's response to it, has the potential to impact many residents and businesses, and infrastructure. A focused, follow-up engagement on the draft SLR Strategy was held from September 1-22, 2020. Overall, the majority of respondents agreed the draft SLR Strategy points the partners in the right direction for preparing for sea level rise. This engagement focused on re-connecting with participants from the initial consultation in early 2020, as well as with key community partners and infrastructure asset owners.

**BACKGROUND:**

The District of North Vancouver (DNV) practices a proactive approach to managing its natural hazards. Developing a SLR Strategy builds on this approach. The DNV partnered with the City of North Vancouver, District of West Vancouver, Port of Vancouver, Squamish Nation, and North Shore Emergency Management to undertake this work. Tsleil-Waututh Nation is currently preparing their own community climate change resiliency planning project and has been included in the public engagements. The project involved technical analysis to identify hazards, vulnerability, and risk, public engagement, development of adaptation approaches and concepts, and actions for next steps.

A summary of public engagement for this project is provided in **Attachment 1**.

**EXISTING POLICY:**

The Official Community Plan (2011) and the Climate Change Adaptation Strategy (2017) provide policy direction to integrate a climate change perspective into infrastructure and ecosystem management, and to plan for and adapt to sea level rise. The Community Energy and Emissions Plan (2019) complements climate adaptation work by also focusing on mitigating climate change.

**ANALYSIS:**

The draft SLR Strategy document is available online at [www.DNV.org/SeaLevelRise](http://www.DNV.org/SeaLevelRise).

Understanding sea level rise risk across the North Shore

The draft SLR Strategy follows the Province's guidelines that direct municipalities to plan for one metre of sea level rise by the year 2100, and two metres by the year 2200.<sup>2</sup>

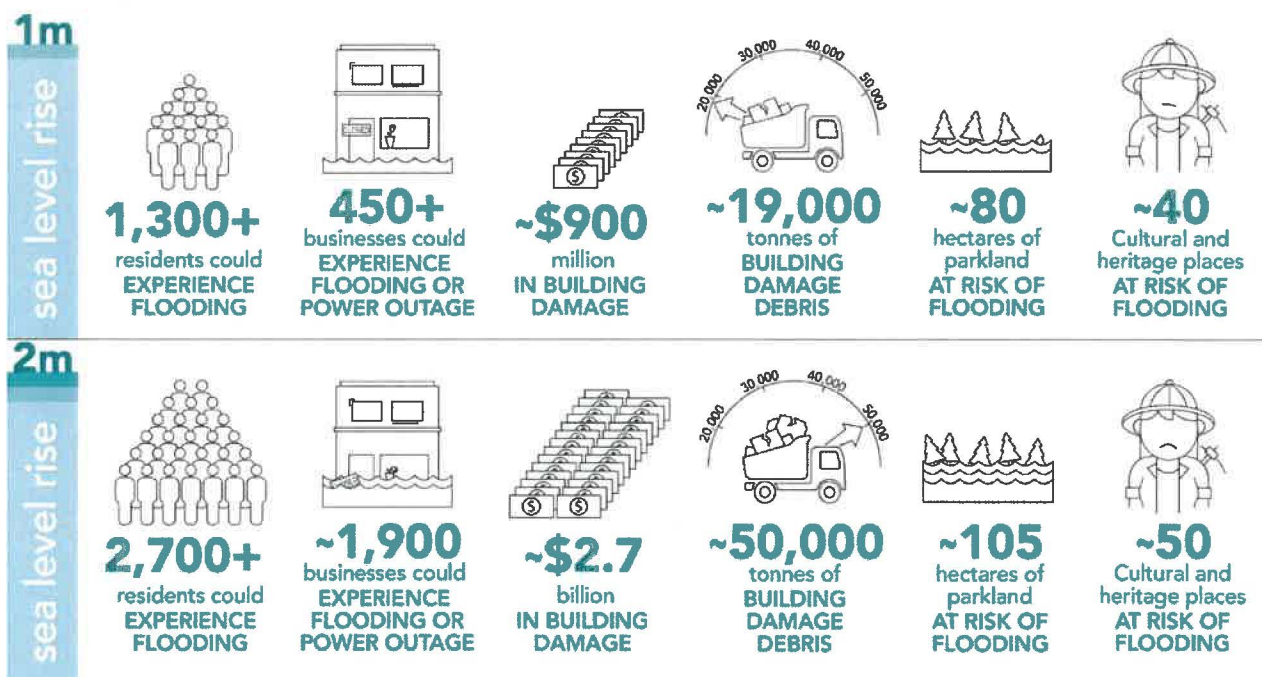
Hazard analysis for sea level rise scenarios combined with a storm surge event show that coastal and low-lying areas of the DNV are at risk of flooding in the future if no adaptation measures are undertaken. These areas include residential, commercial, and industrial uses (primarily Port terminal industries), and park and natural spaces.

Norgate, Lynn Creek, and Maplewood are shown to be more extensively impacted (see section 5 "Hazard Analysis" and maps in Appendix B in the draft SLR Strategy). These areas were also previously identified as at risk of coastal flood hazards in the *Creek Hydrology, Floodplain Mapping and Bridge Hydraulic Assessment* (2014).

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<sup>2</sup> Province of BC, Flood Hazard Area Land Use Management Guidelines, amended 2018.

If adaptation is not undertaken, consequences of sea level rise could include damage to buildings, and impacts to residents' homes, businesses, transportation and wastewater infrastructure, parks, and intertidal habitats. Some of the potential consequences are illustrated in Figure 1, below, and further described in section 6, "Consequences and Risk Assessment" in the draft SLR Strategy.



**Figure 1:** Potential consequences on the North Shore from one and two metre rises in sea levels combined with storm events.

By understanding potential consequences, the DNV and its project partners will be able to better assess how adaptation measures could reduce exposure to possible flooding.

High level adaptation approaches

To respond to coastal flooding and manage sea level rise risk on the North Shore, four different adaptation approaches illustrate what could be done to address sea level rise:

- **Resist:** Build structures to reduce the likelihood of flooding areas;
- **Accommodate:** Acknowledge flood risk, define how much risk can be tolerated, and raise livable spaces vulnerable to flooding;
- **Avoid:** Avoid building or adding more to areas vulnerable to flooding. Or, gradually relocate buildings and infrastructure away from areas at risk of flooding (also known as “managed retreat”); and
- **Advance:** Reclaim land to make space for structures to reduce the likelihood of areas flooding.

Illustrations of these approaches are available at [DNV.org/SeaLevelRise](https://www.dnv.org/SeaLevelRise) and described in section 7, "Adaptation Approaches and Concepts" in the draft SLR Strategy. These concepts were introduced and discussed at the DNV's community workshops held in February 2020. The approaches could be used in combination, and different combinations could be used in different areas across the North Shore.

Action areas to manage the risk

The draft SLR Strategy recommends six priority next steps to initiate over the next 10 years. These were developed based on the technical analysis by the consultant and shaped by input from the initial public engagement. These next steps apply across the North Shore and may be either completed by partners individually or in collaboration where appropriate (i.e. areas that span jurisdictional boundaries).

The six priority next steps are fully described in section 8, "Implementation Plan" of the draft SLR Strategy, and summarized as follows:

- 1. Formalize a North Shore sea level rise adaptation working group**  
Continue the collaborative staff working group that guided the development of the draft SLR Strategy. This group would coordinate shared opportunities for external funding, partner on implementation planning, and share adaptation progress. Invite Tsleil-Waututh Nation, who has been developing their own community climate change resiliency planning project, to join the working group.
  
- 2. Continue to build knowledge about the impacts of sea level rise**  
Continue investigating potential impacts of sea level rise both across the North Shore and within local community areas. Continue building and sharing knowledge on a range of topics as adaptation planning continues (i.e. impacts on groundwater quality, shoreline erosion, and impacts on the storm water system).
  
- 3. Establish Comprehensive Adaptation Plans in collaboration with partners**  
The draft SLR Strategy identifies nine comprehensive adaptation planning zones for low-lying areas across the North Shore. Three of the zones are partially or fully within the District of North Vancouver:
  - Norgate-Mosquito (with City of North Vancouver, Squamish Nation, and Port of Vancouver);
  - Lynn-Seymour (with City of North Vancouver, Squamish Nation, and Port of Vancouver); and
  - Maplewood (with Port of Vancouver).

The draft SLR Strategy includes preliminary adaptation concepts for the zones. These concepts are illustrative only and intended to provide a starting place for future adaptation planning efforts that would assess these concepts in more detail and compare them with alternative concepts. They do not represent preferred or the final selection of measures by the North Shore partners.

The preliminary concepts for the DNV's zones are described in section 7.4 of the draft SLR Strategy. In brief, the concepts include:

- Land raising generally in port/industrial/commercial areas;
- Setback dikes (dikes that are built inland and set back further than a traditional shoreline dikes) generally to protect residential/commercial areas;
- Flood-proofing measures for buildings north of setback dikes;
- Opportunities to provide space for habitat areas and natural shorelines; and
- Potential opportunities to reduce risk through land use planning (e.g. density restrictions, avoid/managed retreat adaptation approaches described above.)

Should the SLR Strategy be approved by Council, these preliminary adaptation concepts would be used to launch more detailed planning. This work would be needed before selecting preferred concepts and implementing them in each of the zones. Future work anticipated would include evaluation of concepts (i.e. considering costs, level of risk reduction, feasibility, and environmental and social impacts and benefits), cost estimates, and public engagement.

**4. Integrate findings from this strategy into community-wide flood management initiatives**

Update or develop bylaws, regulations, and development permit areas to proactively respond to the potential impacts of sea level rise.

For the DNV, staff anticipate drafting a coastal Development Permit Area to sensitively guide development in the areas potentially at risk from sea level rise. This step would also support implementation of the following OCP policies:

- Establish a new Marine Foreshore Development Permit Area to protect and improve the health of the marine foreshore (OCP policy 9.3.9); and
- Encourage the management of shoreline areas to adapt to potential climate change impacts as well as to protect ecologically sensitive areas (OCP policy 10.4.3).

**5. Continue to build public awareness about coastal flooding and sea level rise**

Ongoing engagement would build community awareness of sea level rise impacts and understanding of potential adaptation approaches in each community. Actions could include sharing strategy outcomes on the project webpage, publicly communicating ongoing progress towards implementing the strategy, and continuing to engage the public and community groups as each Comprehensive Adaptation Plan is developed.

**6. Coordinate with other levels of government**

Continue to engage with relevant senior levels of government and agencies during implementation of the SLR Strategy, including the development of Comprehensive Adaptation Plans and regulatory approaches. The DNV is well positioned for this action as it already collaborates with key agencies on this topic and is a partner on the Fraser Basin Council, which is developing the Lower Mainland Flood Management Strategy.

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To support continued sea level rise adaptation planning and implementation of the previously described six priority next steps, the draft SLR Strategy includes a number of useful resources, such as a sea level rise adaptation toolkit tailored to the North Shore (section 7.2 in the draft SLR Strategy), policy and regulatory guidance on managing development in the coastal floodplain (section 7.3 of the draft SLR Strategy), and suggested evaluation criteria (section 7.5 of the draft SLR Strategy).

**PUBLIC ENGAGEMENT**

Initial public engagement (January-March 2020)

Initial public engagement for this project was held in January-March 2020. It included community workshops in the DNV, and an online survey held jointly with the project partners. The DNV promoted the engagement opportunities in the following ways:

- Promoted on the DNV webpage;
- Posted on DNV social media;
- Mailed letters to property owners within the sea level rise planning area in the DNV; and
- Emailed notifications to local community organizations, government organizations, agencies and infrastructure asset owners, Tsleil-Waututh Nation, relevant DNV committees, and long-term leaseholders on DNV property in the planning area.

The mailed letters and email notifications encouraged those interested in the development of the SLR Strategy to sign-up on an email list for notifications.

A brief summary of the key themes from the initial public engagement is below. Full summaries are available in **Attachment 1** and section 3 “Community Engagement” of the draft SLR Strategy.

*Community Workshops*

The DNV hosted three community workshops to provide in-person opportunities for participants to learn about sea level rise and share their views about adapting to sea level rise through facilitated, interactive activities. Workshops were held in Norgate, Maplewood, and Deep Cove with a total of 48 participants in February 2020. Some highlights include:

- Participants had a general understanding of the challenges at hand, and the need for on-going, long-term planning for sea level rise; and
- Participants discussed the benefits and disadvantages of the high-level adaptation approaches (i.e. resist, accommodate, avoid, and advance). As there is no “silver bullet” solution, participants expressed concerns about each approach, as well as made suggestions for how these approaches could work.

*Online Survey Results*

The online survey was available on the webpage, [DNV.org/SeaLevelRise](http://DNV.org/SeaLevelRise), from January 21, 2020 to March 9, 2020. In total, there were 77 respondents. The majority of respondents identified as residents in the DNV (63 of 74, 85%). The following list highlights several key findings:

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- Criteria that should be considered when selecting sea level rise adaptation measures: low environmental impact, effectively reduce risk, and can be adjusted over time (top three); and
- Comments on the potential consequences of sea level rise and the adaptation approaches indicated a desire to prepare now for sea level rise and avoid building in areas vulnerable to flooding.

Public input received during the initial engagement has been considered alongside technical analysis to develop the draft SLR Strategy. Section 3.3 of the draft SLR Strategy describes how the input has been reflected in the draft SLR Strategy.

Follow-up targeted engagement (September 2020)

From September 1-22, 2020, the DNV hosted an online survey at [DNV.org/SeaLevelRise](https://www.dnv.org/SeaLevelRise) on the draft SLR Strategy. The online engagement was accompanied by a summary of the key aspects of the draft SLR Strategy and draft SLR Strategy documents.

This follow-up engagement aimed to re-connect with those who previously expressed interested in following the draft SLR strategy process. Specifically, the DNV sent email notifications to participants who expressed interest during the initial engagement (workshops attendees, email list), and key community partners and stakeholders (e.g. Metro Vancouver, infrastructure asset owners, Tsleil-Waututh Nation). The survey was also available online for any interested members of the public.

As the follow-up engagement focused on a more targeted audience of participants who expressed interest in the project, the result was a smaller number of survey respondents (19), all of whom identified as residents in the DNV. The following list highlights key themes identified in comments that received more than one response:

- Support for sea level rise regulations for new and existing development (3);
- Support for more education and awareness about sea level rise (2);
- Comments on specific measures or actions (e.g. support for avoid approach, do not support building close to waterways) (3); and
- Do not think much sea level rise will happen, so do not think a strategy is needed (2).

**Timing/Approval Process:**

The SLR Strategy will be ready for consideration by Council at a Regular Meeting of Council after any additional refinements are made as a result of the workshop discussion.

Completion of this project is required before February 28, 2021 in order to meet the grant requirements from the Federation of Canadian Municipalities.

Should Council approve the SLR Strategy, staff will implement the actions by preparing a new coastal Development Permit Area for the DNV, and Comprehensive Adaptation Plans for the comprehensive adaptation planning zones identified in the DNV.

**Concurrence:**

The project is being co-led by DNV Engineering and Community Planning staff with support from Communications. In addition, staff from Transportation, Public Works, Utilities, Parks,

Properties, Development Planning, and Finance have been involved in reviewing the draft SLR Strategy.

**Financial Impacts:**

The draft SLR Strategy is a high-level document and outlines action areas where further, detailed evaluation, costing, and planning for sea level rise adaptation measures are needed. Should Council approve the SLR Strategy, the DNV's long-range financial plan would be updated in future years as required.

**Liability/Risk:**

Coastal flooding and sea level rise are natural hazards that impact the DNV, and it is in the public interest to reduce and mitigate the risks associated with these natural hazards over time.

**Social Policy Implications:**

Areas at risk of sea level rise include places where people in the DNV live, work, and recreate. The draft SLR Strategy considers how sea level rise could impact people in the DNV, and the spaces, places, and infrastructure that they use.

**Environmental Impact:**

The draft SLR Strategy outlines potential impacts to the natural environment from sea level rise if no adaptation measures are taken. Minimizing or avoiding these impacts is a critical factor to be considered when exploring adaptation approaches and options.

**Conclusion:**

Developing a North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy (SLR Strategy) is an important step towards building adaptive capacity and resiliency to rising sea levels. Working with the District of North Vancouver's neighbouring jurisdictions, the draft SLR Strategy seeks to proactively respond to the potential natural hazard, and facilitates opportunities for joint partnership on implementation and integration of actions into asset management, operations, and maintenance programs, community planning policies, long-term funding plans, and emergency management strategies.

**Options:**

1. THAT the report entitled "Draft North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy" dated October 13, 2020 is received for information;

AND THAT the Committee refers the North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy to a Regular Meeting of Council for consideration.  
(Staff recommendation)

OR

2. Take no further action.



**SUBJECT: Draft North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy**

October 13, 2020

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Respectfully submitted,



Stephen Bridger,  
Section Manager Engineering Planning and Design



Nicole Foth,  
Community Planner

**Attachment 1:** Public Engagement Summaries

**Attachment 2:** Presentation

**SUBJECT: Draft North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy**

October 13, 2020

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REVIEWED WITH:		
<input type="checkbox"/> Community Planning	_____	<input type="checkbox"/> Clerk's Office
<input type="checkbox"/> Development Planning	_____	<input checked="" type="checkbox"/> Communications <i>CP</i>
<input type="checkbox"/> Development Engineering	_____	<input type="checkbox"/> Finance
<input type="checkbox"/> Utilities	_____	<input type="checkbox"/> Fire Services
<input checked="" type="checkbox"/> Engineering Operations <i>STG</i>	_____	<input type="checkbox"/> ITS
<input type="checkbox"/> Parks	_____	<input type="checkbox"/> Solicitor
<input type="checkbox"/> Environment	_____	<input type="checkbox"/> GIS
<input type="checkbox"/> Facilities	_____	<input type="checkbox"/> Real Estate
<input type="checkbox"/> Human Resources	_____	<input type="checkbox"/> Bylaw Services
<input type="checkbox"/> Review and Compliance	_____	<input checked="" type="checkbox"/> Planning <i>JP</i>

External Agencies:

<input type="checkbox"/> Library Board	_____
<input type="checkbox"/> NS Health	_____
<input type="checkbox"/> RCMP	_____
<input type="checkbox"/> NVRC	_____
<input type="checkbox"/> Museum & Arch.	_____
<input type="checkbox"/> Other:	_____

**Public Engagement Summaries**

The following public engagement summaries are included in this attachment:

- North Shore Sea Level Rise Strategy: District of North Vancouver Community Workshops – February 2020 – Summary
- North Shore Sea Level Rise Adaptation Strategy Initial Public Engagement Survey Summary (Winter 2020)
- North Shore Sea Level Rise Strategy: Summary of Public Engagement on Draft Strategy (September 2020)

# North Shore Sea Level Rise Strategy

## District of North Vancouver Community Workshops – February 2020

### Summary

Three community workshops were held by the District of North Vancouver as part of the initial public engagement for the North Shore Sea Level Rise Strategy. The North Shore Sea Level Rise Strategy is a proactive, multi-partner project aimed at understanding vulnerabilities to coastal flooding due to sea level rise on the North Shore and developing options, with public input, to manage the potential risks. The project partners are the District of North Vancouver, City of North Vancouver, District of West Vancouver, Squamish Nation, Port of Vancouver, and North Shore Emergency Management.

The District of North Vancouver community workshops provided face-to-face engagement opportunities for those who could be potentially impacted by sea level rise if no adaptation is undertaken. The objectives of the workshops were to:

- Build awareness and understanding of sea level rise, and the potential risks of coastal flooding on the North Shore if no adaptation is undertaken;
- Educate about possible adaptation approaches;
- Start a community conversation about the potential trade-offs and co-benefits of managing coastal flood risk; and
- Listen to participants' views and issues about adapting to sea level rise.

Through structured group activities and a presentation, participants were able to learn more about sea level rise, ask questions, identify what matters to them, and share thoughts on a range of adaptation approach concepts. The workshops were held in Norgate, Maplewood, and Deep Cove with a total of 48 participants.

- February 11, 6:00 – 8:00 pm, Norgate Elementary School (20 participants)
- February 12, 9:00 – 11:00 am, Wild Bird Trust Corrigan Nature House (14 participants)
- February 13, 6:00 – 8:00 pm, Cove Cliff Elementary School (14 participants)



### Communication

To invite participants to the workshops, letters were mailed to property owners within the sea level rise planning area in the District, and email notifications were sent to local community organizations; other government organizations, agencies and infrastructure asset owners; Tsleil-Waututh Nation<sup>1</sup>; District committees; and long-term leaseholders on District property in the planning area. Interested participants were invited to register in advance on the project webpage.



### What we heard

As participants learned more over the course of the workshop, there was a general understanding of the challenges at hand, and the need for on-going, long-term planning.

During the presentation, participants shared comments and asked questions; in general these included: asking about the cost of adaptation, asking clarifying questions about sea level rise, recognition that we need to plan for adaptation, and identifying the need to update bylaws to allow buildings to adapt.

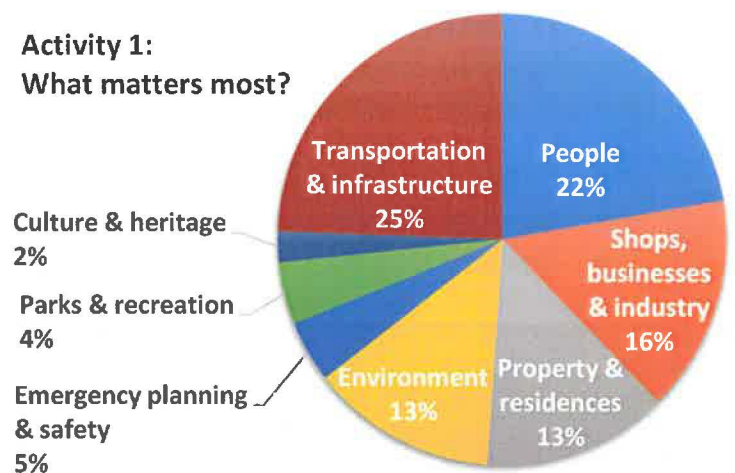
Key themes heard during the workshop activities are summarized below.

#### Activity 1: What matters most?

Participants were asked to share what matters most to them when thinking about sea level rise and coastal flooding. After discussion in table groups, each group was asked to note their top three themes discussed at their table, then verbally report out to the whole group.

Overall, the top three themes reported by the most groups were transportation and infrastructure; people; and shops, businesses and industry. Close behind were properties and residences, and environment.

#### Activity 1: What matters most?



<sup>1</sup> Squamish Nation, the other First Nation with reserves on the North Shore, is a partner on the North Shore Sea Level Rise Strategy.

During the whole group discussion, key comments included:

- Update bylaws to allow buildings to adapt (height, siting);
- Environmental concerns (erosion, impact on animals and people, potential contamination);
- Importance of maintaining transportation routes and infrastructure;
- Concern about businesses (access, jobs, long-term impacts);
- Recognition that all themes matter;
- At the Norgate workshop, suggestion to focus adaptation in the industrial area between Norgate residential and the ocean to protect the residential area;
- Continue to engage with potentially impacted communities; and
- Concern about potential impact to homes.

### Activity 2: Explore adaptation approaches

Participants learned about the adaptation approaches (resist, accommodate, avoid, and advance) and the benefits and disadvantages of each approach. They were asked to share their thoughts on the approaches and their benefits and disadvantages. Participants were encouraged to discuss these high-level concepts, and reminded that the group was not deciding or designing adaptation measures in these workshops. After discussion in table groups, each group was asked to verbally report out a summary of their discussion to the whole group. Key themes from the whole group discussion were as follows.

**Resist** – *Focus on structural measures such as building dikes to reduce the likelihood of flooding.*

- Support for the resist approach, particularly for waterfront industrial areas.
- Concern about impacts of the resist approach (land required, false sense of security in event of structural failure, questions of cost and implementation, bylaw changes needed).
- Co-benefits such as recreation trails with dikes or noise buffering with walls.
- A few suggested specific measures such as a sea dam or flood gates for creeks.

**Accommodate** – *Focus on non-structural adaptation measures, including consciously acknowledging flood risk, defining how much risk we are willing to tolerate, and raising livable spaces in areas vulnerable to flooding.*

- Interest in wet flood-proofing (floodable basements), and living with water.
- Concern about how to adapt existing structures.
- Leverage new development to implement the accommodate approach.
- Need to continue working with land owners and regulatory agencies (e.g. Port, Province).
- Concerns with this approach include: bylaw changes needed to facilitate the accommodate approach, how this approach addresses areas outside of buildings (e.g. roads), how to use accommodate with limited property space, and how it works with other natural hazards.

**Avoid** – *Focus on land use planning to avoid building or adding more uses in areas that are vulnerable to flooding, or gradually relocating buildings and infrastructure away from areas at risk of flooding.*

- Avoid adding more development in flood hazard areas.
- Question of costs to implement the avoid approach.
- General support for the avoid approach.
- Concerns with this approach included: equity issues of who should move or where could move to, loss of property value, need to update bylaws to allow for flexibility, and privacy on property if surrounding uses change.

**Advance** – *Reclaim land to make space for structures such as dikes, which can reduce the likelihood of flooding in coastal areas.*

- Concern about the environmental impacts from the advance approach (e.g. Maplewood mudflats).
- Some expressed support for the advance approach in waterfront industrial areas or where filling has already occurred, noting the advance approach has historically been used in some places on the North Shore.
- Questions about implementing the advance approach: cost, limiting regulation, how to implement it.

During Activity 2, there were comments during the large group discussion about adaptation in general. Key themes included:

- Concern about the environmental impacts from sea level rise and adaptation approaches;
- Concern about being able to achieve political consensus for action, recognizing that sea level rise is a difficult topic, and concern about failure of measures;
- Appreciate sea level rise planning is happening on the North Shore to build resiliency;
- Question of how much adaptation measures will cost versus taking no action;
- Update bylaws to be flexible and responsive to different areas; and
- Some voiced support for different combinations of adaptation approaches or all four approaches, and the need to tailor adaptation by area.

### Activity 3: Reflection on workshop

To conclude the workshop, participants shared their final thoughts. Key themes during the group discussion included:

- Appreciate planning for sea level rise and opportunity for engagement;
- Recognize that climate mitigation (i.e. decreasing greenhouse gases) is important, too;

- Identify the need for coordination across many different groups to address the challenges presented by sea level rise;
- Concerns about impacts to human health, transportation routes, other natural hazards; and
- Recognize that the present state today is inherited from past decisions.

**Next steps**

Input received from the initial engagement will be considered alongside technical analysis as the draft Sea Level Rise Strategy is developed. Initial engagement for the Sea Level Rise Strategy included the District’s community workshops, and an online survey jointly hosted by the project partners (input received via the online survey is summarized separately). Input from initial engagement will help inform the Strategy for Council’s consideration.



# North Shore Sea Level Rise Adaptation Strategy

## Initial Public Engagement Survey Summary (Winter 2020)

As part of the development of the North Shore Sea Level Rise Adaptation Strategy, the project partners (District of North Vancouver, City of North Vancouver, District of West Vancouver, Squamish Nation, Port of Vancouver, and North Shore Emergency Management) conducted a public survey, part of the initial public engagement.

The survey was open from January 21, 2020 to March 9, 2020 on the District of North Vancouver’s website at [DNV.org/SeaLevelRise](http://DNV.org/SeaLevelRise). Each partner determined how to communicate the survey to their respective communities.

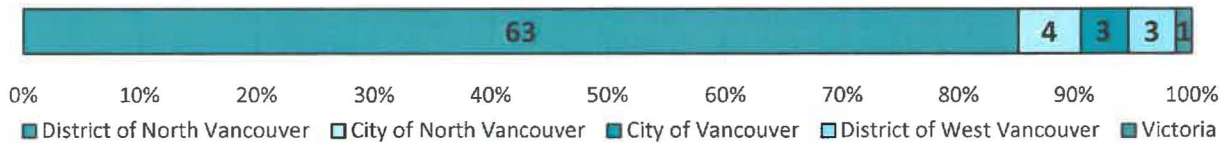
**Total number of respondents: 77**

The number of responses for each question may vary, as not all respondents answered every question.

### 1. Where do you live?

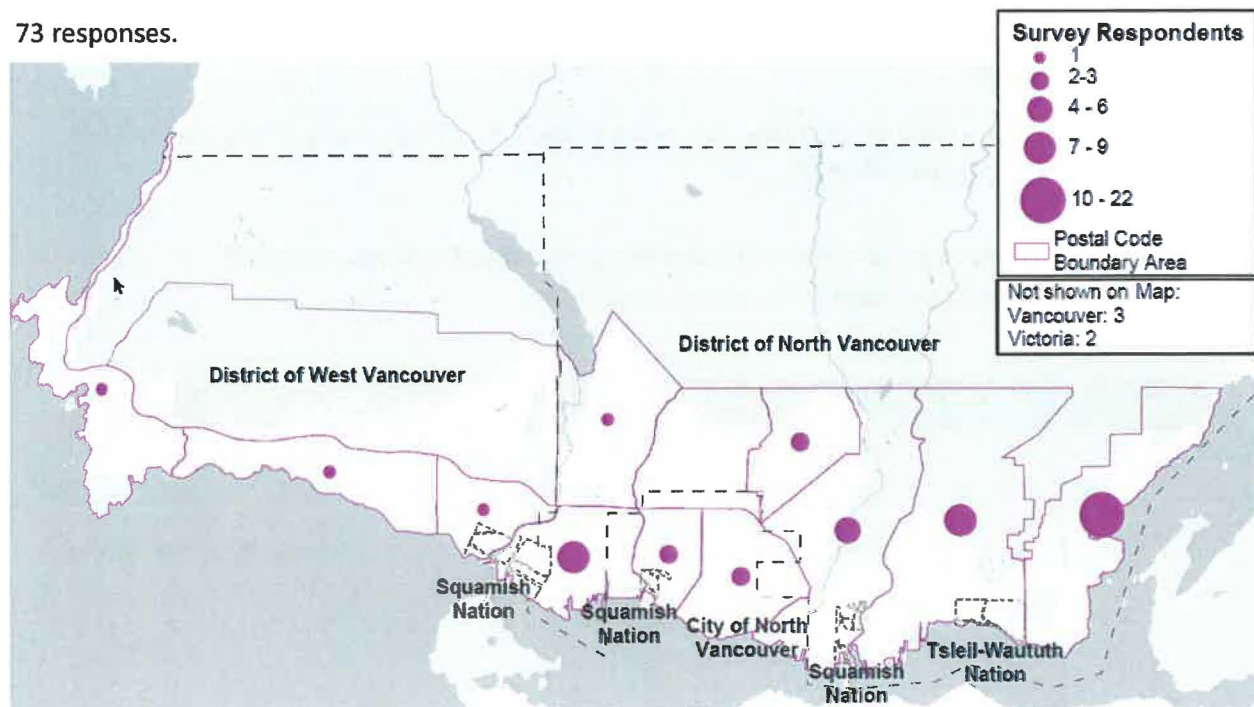
The majority of respondents said they live in the District of North Vancouver (63 of 74, 85%).

#### Where do you live?



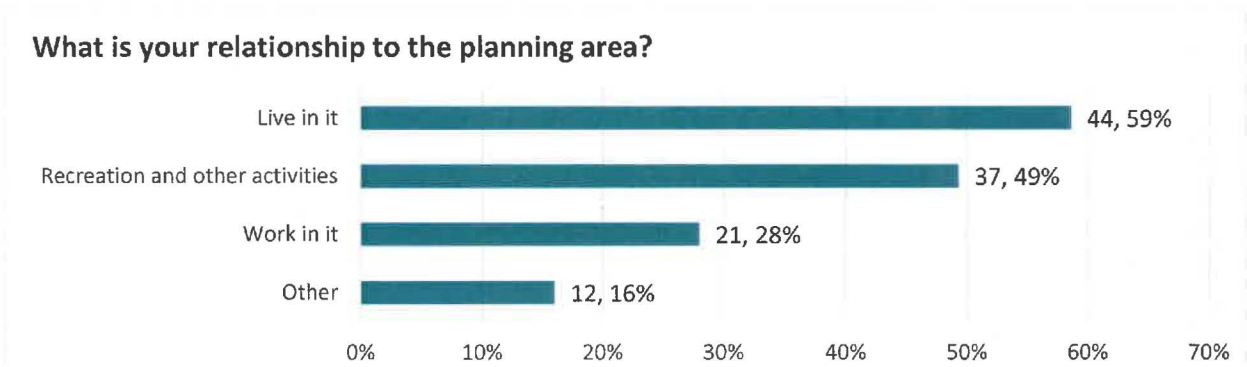
### 2. What are the first three letters of your postal code?

73 responses.



**3. What is your relationship to the planning area? Choose all that apply.**

Over half of the respondents live in the planning area (44 of 75, 59%), and almost half of the respondents recreate or participate in similar activities in the planning area (37 of 75, 49%).



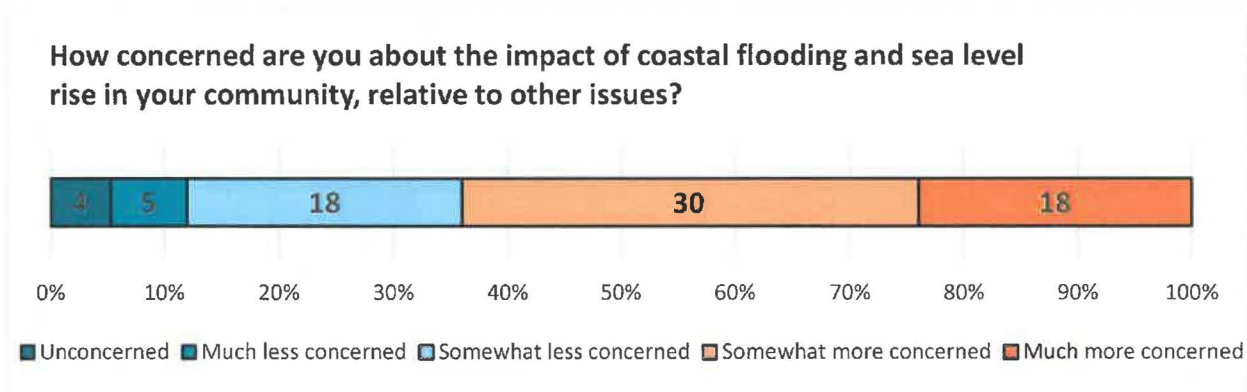
*(Since respondents could choose more than one option, the percentage represents the portion of respondents who selected an option of the total respondents.)*

Of the 12 respondents who selected “Other”, the responses had the following themes:

- Live near or want to live in the planning area (3 responses)
- Own property in the planning area (3 responses)
- Use transportation routes through the planning area (3 responses)
- Use businesses in the planning area (1 response)
- Concerned about environmental impact (1 response)
- Interested in topic (1 response)

**4. How concerned are you about the impact of coastal flooding and sea level rise in your community, relative to other issues?**

Most respondents indicated they are somewhat more or much more concerned about sea level rise than other community issues (48 of 75, 64%).



## 5. Do you have comments about these guiding principles?

The guiding principles presented were:

- 1. Sea level is rising and we have to be willing to accept change**  
Areas at risk of flooding due to sea level rise will be affected unless we take proactive steps to minimize the impact.
- 2. Adaptation is flexible in the face of uncertainty**  
New scientific and technical information informs our decisions. Adaptation should prepare us for a range of scenarios in the future, including changes in the pace and height of sea level rise over time.
- 3. Decisions are risk-based and consider impacts to different sectors**  
Hazard and risk information drives our discussions, and impacts to environment, economic, and social sectors are considered.
- 4. Everyone has a role in adaptation**  
We need to work together to create more resilient communities by working collaboratively across levels of government and with our communities on our actions.
- 5. Planning includes education and awareness opportunities**  
Openly communicating flood risks facing different areas on the North Shore, and being transparent about adaptation planning as it evolves, helps ensure our communities have a shared awareness.

Of the 30 respondents who provided comments, most agreed with the guiding principles as presented (15 of 30, 50%). The responses had the following themes (some comments had more than one theme):

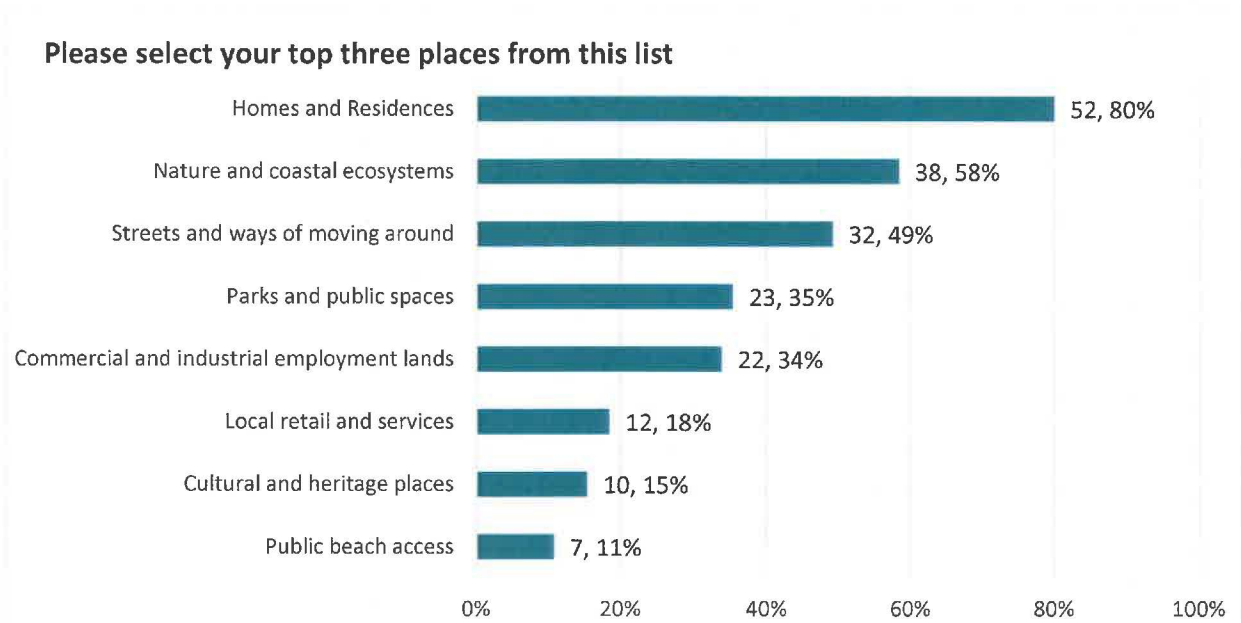
- Agree with the principles (15 responses)
- Climate change mitigation is important, too (5 responses)
- Importance of protecting habitats and the environment (3 responses)
- Concern about funds spent on sea level rise planning (2 responses)
- Concern about new development in sea level rise planning area (1 response)
- Impact on local First Nations (1 response)
- Importance of human safety and transportation (1 response)
- Sea level rise is less important than other issues (1 response)
- Need to be able to respond to changing scenarios (1 response)
- Support for adaptation planning (1 response)
- Suggestion to partner with communities outside the region (1 response)

**North Shore Sea Level Rise Adaptation Strategy**  
Initial Public Engagement Survey Summary (Winter 2020)

**6. Please select your top three places from this list.**

Respondents were asked to select their top three places that matter most to them from a list of options.

The top three places selected by respondents were: homes and residences (52 of 65, 80%), nature and coastal ecosystems (38 of 65, 58%), and streets and ways of moving around (32 of 65, 49%).



*(Since respondents could choose more than one option, the percentage represents the portion of respondents who selected an option of the total respondents.)*

**7. Are there other kinds of places that matter to you?**

Of the 18 respondents who provided comments, one third expressed that they felt they couldn't choose or rank them because all or most of these places are important (6 of 18, 33%). The responses had the following themes:

- All or nearly all of these places are important (6 responses)
- Concern about vulnerable populations living or accessing services in or near areas at risk of flooding (2 responses)
- Critical infrastructure (2 responses)
- Schools (2 responses)
- Concern about impacts to First Nations' land (1 response)
- Transportation hubs (1 response)
- Ecosystems (1 response)
- Watersheds (1 response)
- Parks and streets and ways of moving around (1 response)
- Commercial and industrial employment lands (1 response)

## 8. Do you have thoughts about the consequences of sea level rise?

Of the 37 respondents who provided comments, nearly a quarter expressed the need to prepare for sea level rise now to reduce the consequences (9 of 37, 24%). The responses had the following themes:

- We need to prepare for sea level rise now (9 responses)
- Prevent new development in high-risk areas (6 responses)
- Build new buildings with sea level rise in mind (4 responses)
- We have time to adapt (3 responses)
- To reduce consequences, we need to mitigate climate change as well as adapt (2 responses)
- Preserve and restore coastal ecosystems (2 responses)
- Concern about the consequences of sea level rise (2 responses)
- Continue to educate residents about sea level rise (2 responses)
- There are more pressing issues than sea level rise (2 responses)
- Work with other levels of government and with other North Shore municipalities (1 response)
- Balance risks and costs (1 response)
- Use parkland as a natural barrier to sea level rise (1 response)
- Concerned about the costs of adaptation (1 response)
- Concerned about displacement of residents and businesses (1 response)

## 9. Do you have comments, ideas, or concerns about these adaptation approaches?

The four approaches presented were:

- **Resist:** Build structures to reduce the likelihood of flooding
- **Accommodate:** Acknowledge flood risk, define how much we are willing to tolerate, and raise livable spaces vulnerable to flooding
- **Avoid:** Avoid building or adding more to areas vulnerable to flooding, or gradually relocate buildings and infrastructure away from areas at risk of flooding
- **Advance:** Could include reclaiming (filling in) land to create space for a dike, for example

There were 34 respondents who provided comments. Of the 30 respondents who commented on a specific adaptation approach, almost half supported the Avoid approach (14 of 30, 47%). The responses had the following themes (some respondents' comments had more than one theme):

Comments supporting individual adaptation approaches:

- Support for Avoid (14 responses)
- Support for Accommodate (7 responses)
- Support for Resist (7 responses)
- Support for Advance (2 responses)

Other comments:

- General support for adaptation approaches (5 responses)

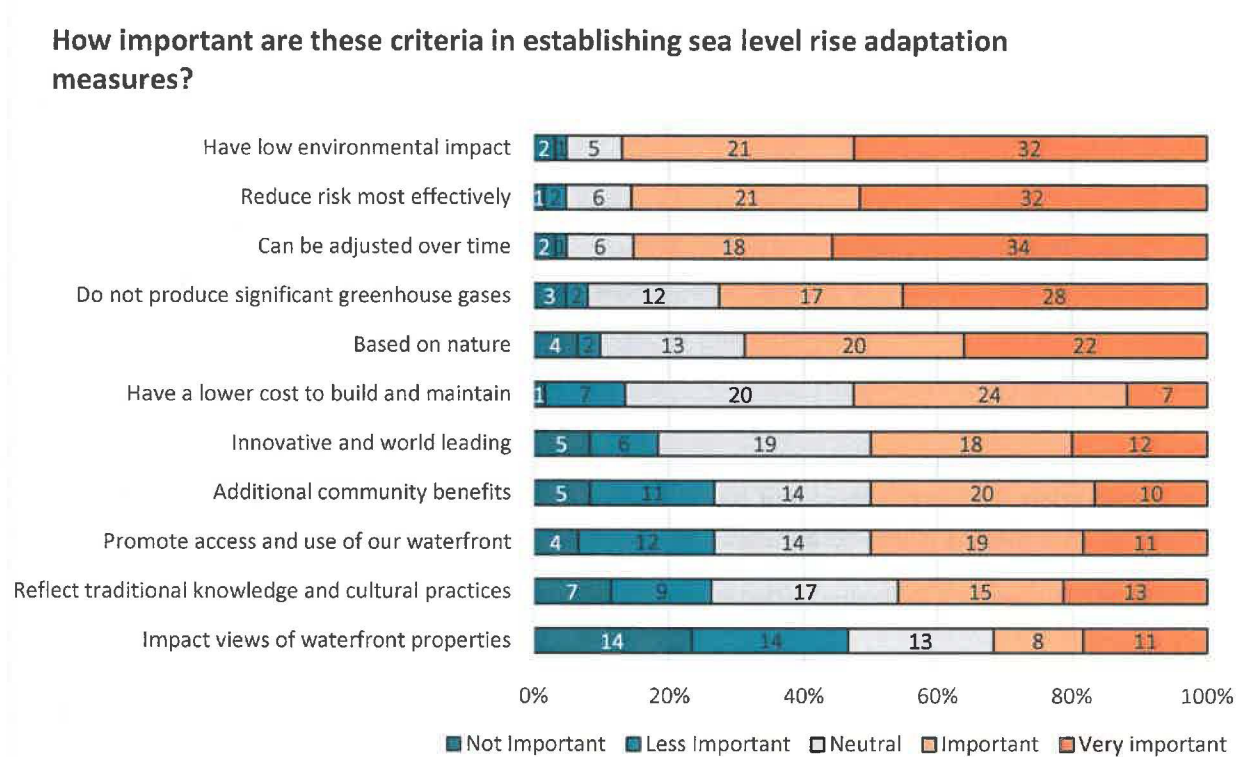
## North Shore Sea Level Rise Adaptation Strategy Initial Public Engagement Survey Summary (Winter 2020)

- Support nature-based solutions (3 responses)
- Do not shift impact onto another property (2 responses)
- Limit impact on environment (2 responses)
- Continue raising awareness about adaptation approaches and the risks of sea level rise (2 responses)
- Consider life cycle costs of these approaches, including future upgrades or maintenance (2 responses)
- Incentivize moving away from flood prone areas (1 response)
- Mitigation needed as well as adaptation (1 response)
- Support beach nourishment (1 response)
- Property owners should be compensated for loss of value (1 response)
- Incorporate sea level rise uncertainties (1 response)

### 10. How important are these criteria in establishing sea level rise adaptation measures?

Respondents were asked to rank the importance of criteria from a list of options.

The top ranking criteria that respondents indicated were important or very important to consider in establishing sea level rise adaptation measures were: have a low environmental impact (53 of 61, 87%), reduce risk most effectively (53 of 62, 85%), and be able to adjust over time (52 of 61, 85%).



*(Total number of responses varies for each criterion.)*

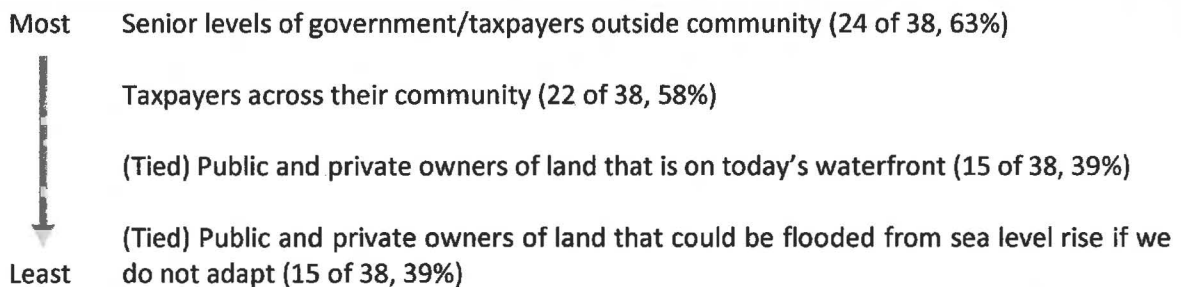
**11. Please indicate the level of funding you think each group should provide.**

Respondents were asked to rank the order of how much funding the following groups should provide for adaptation measures:

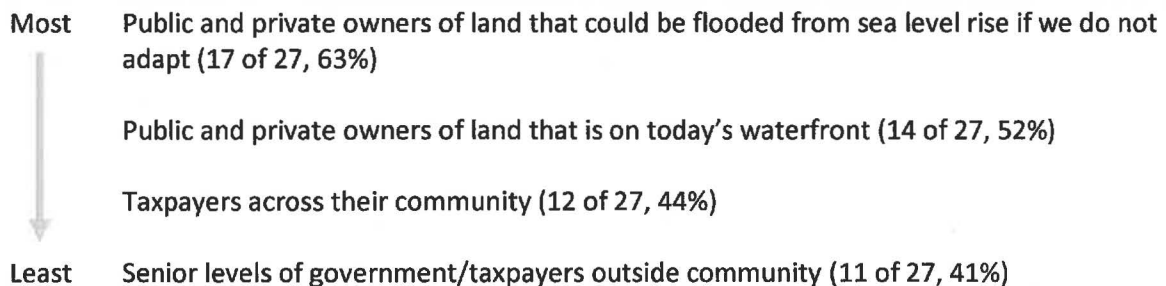
- Public and private owners of land that is on today's waterfront,
- Public and private owners of land that could be flooded from sea level rise if we do not adapt (on today's waterfront as well as inland),
- Taxpayers across the respondent's community, and
- Taxpayers outside of the respondent's community, including senior levels of government (Provincial, Federal).

There were 65 total responses. Responses were categorized by respondents who identified as living in the sea level rise planning area, and those who are not living in the planning area or did not specify (survey question 3).

Of the 38 respondents who live within the planning area, they generally ranked the order of who should pay the most (ranked 1<sup>st</sup> or 2<sup>nd</sup>) as follows:



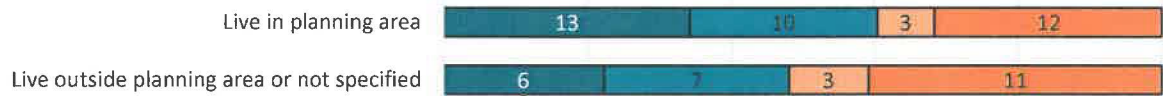
Of the 27 respondents who live outside the planning area or did not specify where they live, they generally ranked the order of who should pay the most (ranked 1<sup>st</sup> or 2<sup>nd</sup>) as follows:



**North Shore Sea Level Rise Adaptation Strategy**  
 Initial Public Engagement Survey Summary (Winter 2020)

**Please indicate the level of funding you think each group should provide.**

Public and private owners of land that is on today's waterfront



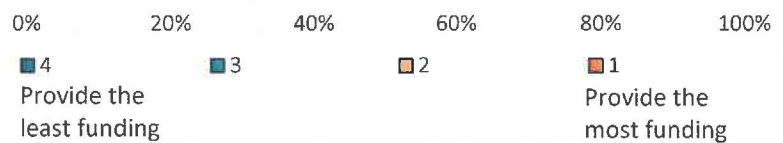
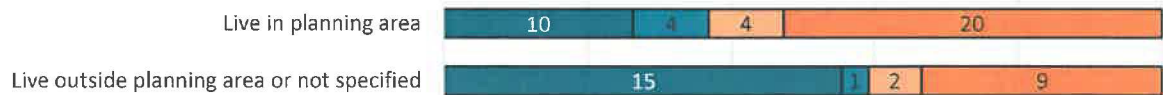
Public and private owners of land that could be flooded from sea level rise if we don't adapt



Taxpayers across your community



Senior levels of government/taxpayers outside your community



**Other input received**

One letter was received from the Medical Health Officer, Vancouver Coastal Health – North Shore was received in response to the initial public engagement (attached).



February 21, 2020

Stephen Bridger, PEng, MASc  
Section Manager - Engineering Planning & Design  
District of North Vancouver  
355 West Queens Road  
North Vancouver, BC V7N 4N5

via email: [bridgers@dnv.org](mailto:bridgers@dnv.org)

Dear Mr. Bridger,

**RE: North Shore Sea Level Rise Strategy**

Thank you for giving Vancouver Coastal Health (VCH) the opportunity to participate and comment on the early phase of the North Shore Sea Level Rise Strategy. VCH supports engagement with community members and overall strategic planning to mitigate impacts of sea level rise near the North Shore shorelines due to climate change.

Climate change will impact human health in BC through various pathways including air and water quality deterioration, wildfires, flooding, extreme heat, change in food sources, and range extension of pathogens and disease vectors. These impacts may exacerbate current health and social disparities. Health impacts will be dependent on a person's exposure to the risk (e.g. location and quality of housing, occupation), sensitivity to that exposure (e.g. age, health status or health care needs) and adaptive capacity (e.g. economic resources, social capital, access to technology and information and skills). These health impacts will likely place increased stress on the health care system. The 2018 Lancet Countdown on Health and Climate Change states that "climate change threatens to undermine the past 50 years of gains in public health, and conversely, that a comprehensive response to climate change could be "the greatest global health opportunity of the 21st century."<sup>1</sup>

With this great opportunity, we offer the following recommendations for consideration:

1. Climate change and sea level rise will impact the physical, psychological, and social well-being of the population on the North Shore. We recommend reviewing information on the BC Centre for Disease Control (BCCDC) Community Health Profiles<sup>2</sup> about the demographics in each municipality, and various factors that could affect the health of the residents, especially the vulnerable populations. You may visit our VCH community care facilities website<sup>3</sup> for information about the locations of childcare and residential care facilities where vulnerable populations are in care. Furthermore, we encourage the committee to understand the demographic forecasts for the North Shore by utilizing the functions on the My Health My Community Health Atlas<sup>4</sup> when strategizing any adaptation approaches in specific areas.

<sup>1</sup> Watts N, Amann M, Ayeb-Karlsson S, Belesova K, Bouley T, Boykoff M, Byass P, Cai W, et al. (2018). The Lancet Countdown on health and climate change: from 25 years of inaction to a global transformation for public health. *The Lancet* 391: 581-630. doi:10.1016/S0140- 6736(17)32464-9.

<sup>2</sup> BCCDC Community Health Profiles - <http://communityhealth.phsa.ca/GetTheData>

<sup>3</sup> VCH Childcare and Residential Care Facility - <https://inspections.vcha.ca/ChildCare/Table>

<sup>4</sup> My Health My Community Health atlas - <https://myhealthmycommunity.org/explore-results/results-by-community/dashboard/>

2. Climate change is a health equity issue that has the potential to exacerbate existing social and health vulnerabilities. Those with the least resources will likely be impacted the most. For example, BCCDC states that "neighbourhood-level investments to mitigate climate change may instigate neighbourhood gentrification and lead to further marginalization of low-income residents who can no longer afford to live in the very neighbourhoods designed to support them."<sup>5</sup> Communities can therefore be strengthened by articulating the potential health co-benefits and/or implications to vulnerable populations.
3. We encourage all participating municipalities to review and strengthen bylaws, policies, and strategies with standards that are equivalent to or higher than the Metro Vancouver Board's recently-approved Climate 2050 Strategic Framework<sup>6</sup> for the purpose of building resilience in the communities.
4. We strongly recommend ongoing public education and engagement in communities throughout all phases of this project to raise their understanding of how their neighbourhood may be directly affected by the rising sea level now and in the future. The collaborative approach offers a great opportunity to generate support and to ensure transparency in an authentic, cross-cultural community engagement and the decision-making process.
5. Given the topography of the area, we recommend planners consider the population and infrastructure impacts associated with a trifecta of potentially simultaneously occurring issues, including: (1) sea level rise, (2) king tides and (3) run off from increased precipitation on the slopes and potential associated water quality contamination/turbidity and infrastructure damage loss of power from flooding.

VCH looks forward to working with the strategic team throughout all phases in this project. If there are any further questions regarding the comments above, please contact me at [mark.lysyshyn@vch.ca](mailto:mark.lysyshyn@vch.ca) or 604-983-6701.

Sincerely,



Mark Lysyshyn, MD, MPH, FRCPC  
Medical Health Officer  
Vancouver Coastal Health, North Shore

<sup>5</sup> BC Centre for Disease Control. (2017). Fact sheet: Supporting health equity through the built environment. Retrieved from [http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/EH/BCCDC\\_equality-fact-sheet\\_web.pdf](http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/EH/BCCDC_equality-fact-sheet_web.pdf)

<sup>6</sup> Climate 2050 Strategic Framework - [http://www.metrovancouver.org/services/air-quality/AirQualityPublications/AQ\\_C2050-StrategicFramework.pdf](http://www.metrovancouver.org/services/air-quality/AirQualityPublications/AQ_C2050-StrategicFramework.pdf)

# North Shore Sea Level Rise Strategy: Summary of Public Engagement on Draft Strategy

September 2020

## Overview

An online survey was hosted on the District's webpage from September 1-22, 2020 (three weeks) to seek public input on the draft North Shore Sea Level Rise Strategy. The online survey was accompanied by summary information highlighting key aspects of the draft strategy, and a copy of the complete document. The initial public engagement on developing the Sea Level Rise Strategy was held in January-March 2020, and the September 2020 public engagement was a focused follow-up engagement.

## Communication

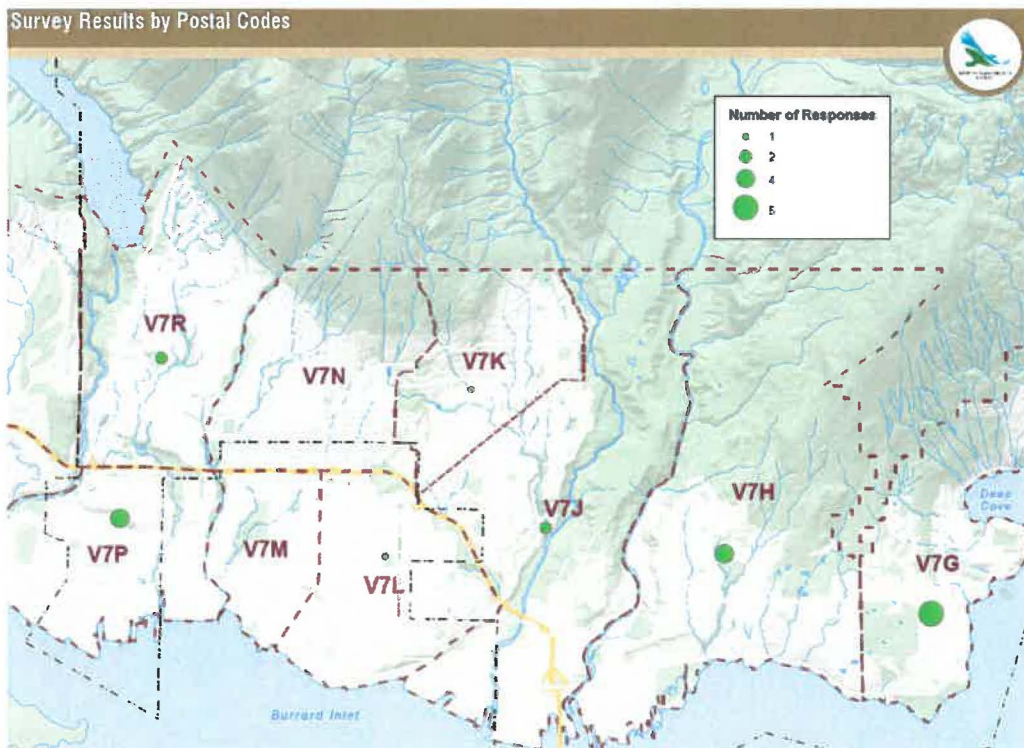
The District sent email notifications about the survey to participants from the community workshops held in February 2020, those who signed up for email notification and identified as District residents (each project partner is responsible for communicating with their respective communities), and key community partners and stakeholders (e.g. Metro Vancouver, infrastructure asset owners, Tsleil-Waututh Nation). The survey was also available online for any interested members of the public.

## Survey questions and responses

### 1. Where do you live?

District of North Vancouver (19 of 19 respondents, 100%)

### 2. What are the first three letters of your postal code? Total respondents: 19.



**3. Do you have comments about the key actions outlined in the draft strategy?**

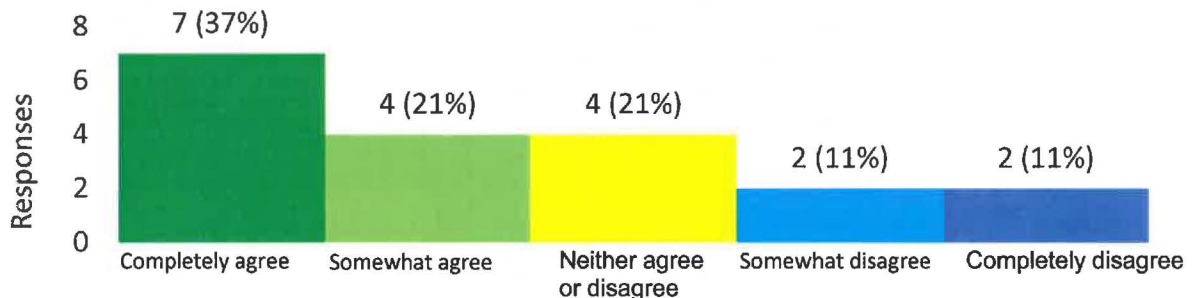
Total respondents: 14.

Response themes (open-ended question format; note that some respondents mentioned more than one theme):

- Support for the actions and continuing sea level rise adaption planning (3)
- Support for specific measures or actions:
  - nature-based adaptation measures (1)
  - avoid or accommodate approaches (1)
  - assess the feasibility of adaptation measures (1)
  - dikes in Maplewood (1)
  - tax large vehicle owners (1)
  - consider impacts of a large earthquake that will have larger consequences than sea level rise (1)
- Do not think much sea level rise will happen (2)
- Concern that lack of political will impede implementation (1)
- Concern about climate change and human impacts on the environment (1)
- Concern that long-term sea level rise projections are too far into future for planning today (1)
- Desire to be involved in future sea level rise planning (1)
- Concern some properties on Indian Arm currently experience flooding during storms (1)

**4. Please respond to this statement: The draft strategy points us in the right direction to continue our work towards preparing our communities for sea level rise.**

Total respondents: 19.



**5. Do you have other comments about sea level rise adaptation or the draft strategy?**

Total respondents: 13.

Response themes (open-ended question format; note that some respondents mentioned more than one theme):

- Support for sea level rise regulations for new and existing development (3)
- Support for more education and awareness about sea level rise (2)
- Comments on specific measures or actions:
  - Support for avoid or accommodate approaches (1)
  - Support for dikes in Maplewood (1)
  - Do not support dikes or building close to waterways (1)
- Do not think much sea level rise will happen, so do not think a strategy is needed (2)
- Suggestion to prioritize protection of natural environment as the most cost-effective long-term solution (1)
- Suggestion that impacts of a large earthquake that will have larger consequences than sea level rise (1)
- Suggestion to add a carbon cost on all projects (1)
- Ensure flexibility in adaptation measures (1)
- Concern about the long-term horizon of the sea level rise projections (1)
- Concern that larger changes are needed to prevent sea level rise from happening (1)
- Desire to be involved in future sea level rise planning (1)

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# North Shore Sea Level Rise Risk Assessment & Adaptive Management Strategy

## Draft Strategy Presentation

October 26, 2020  
Council Workshop

# North Shore Sea Level Rise Strategy

DISTRICT OF  
NORTH  
VANCOUVER

west vancouver

city  
of north  
vancouver

PORT of  
vancouver



Skwxwú7mesh  
Úxwumixw  
Squamish Nation

NS<sup>EM</sup>

Grant Funding:

**FCM** FEDERATION  
OF CANADIAN  
MUNICIPALITIES

Consultant:

**kwj** KERR WOOD LEIDAL  
consulting engineers



DISTRICT OF  
NORTH  
VANCOUVER

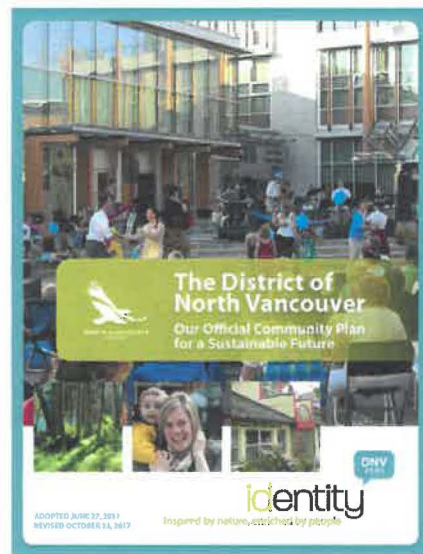
North Shore Sea Level Rise Strategy

Slide 2 of 12  
DM 4537211





# Policy Context

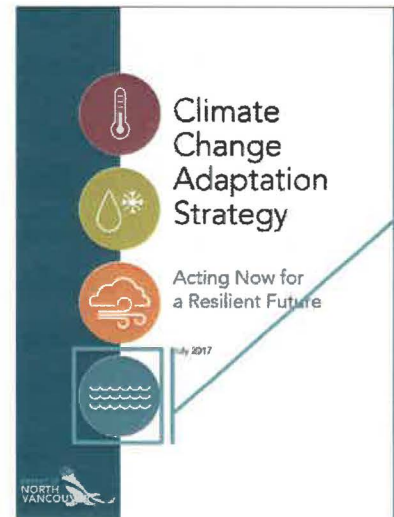


Official Community Plan

- Climate change objectives & policies

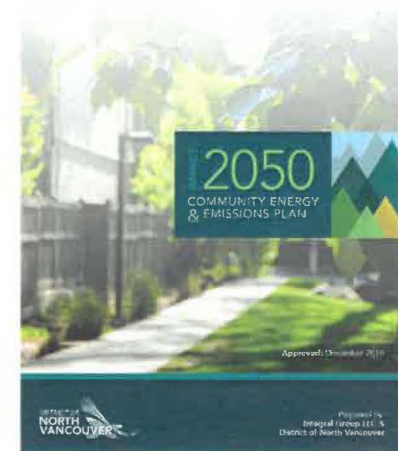
Adaptation

Mitigation



Climate Change Adaptation Strategy

Sea Level Rise



Community Energy and Emissions Plan



## Sea Level Rise

# Process

PHASE 1-3

### Technical Analysis

SUMMER 2018 - SPRING 2019

- Review context
- Identify coastal flood hazards
- Assess vulnerability and risk



Norgate



Maplewood



Deep Cove

PHASE 4

### Adaptation Actions Development

SUMMER 2019 - WINTER 2020

- Explore adaptation approaches
- Develop adaptation concepts and action areas

Public engagement:  
exploring adaptation

PHASE 5

### Final Strategy

2020

- Refine adaptation concepts and action areas
- Finalize strategy

Public engagement:  
draft strategy

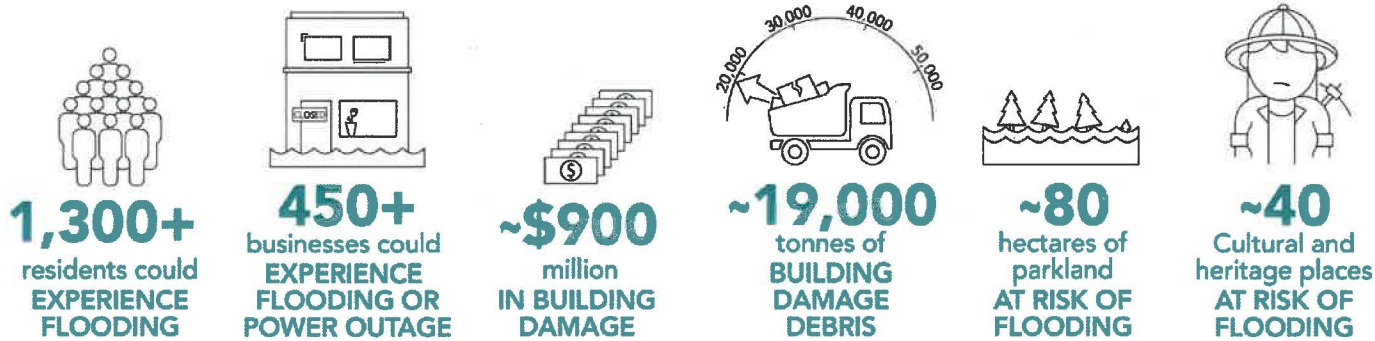
We are here



# North Shore Consequences

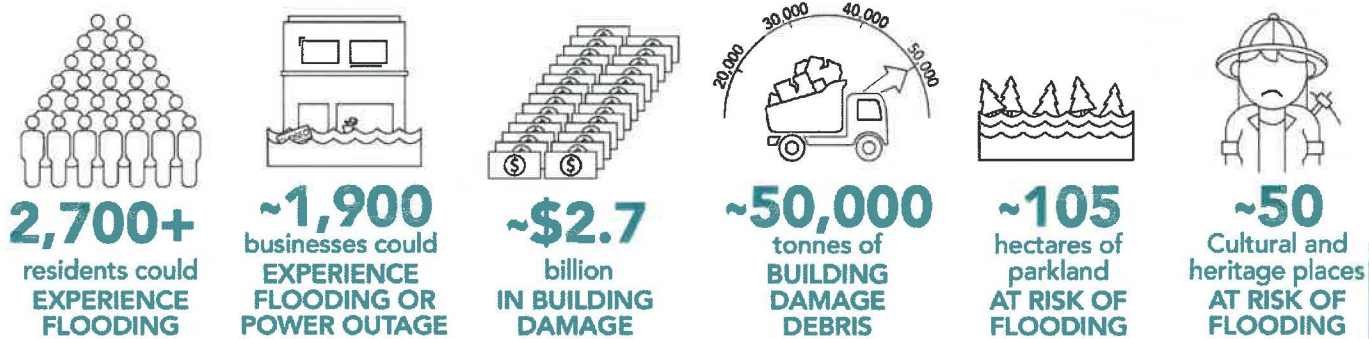
## Without adaptation measures

1m  
sea level rise



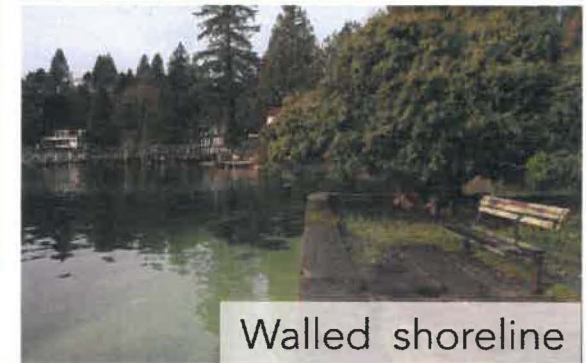
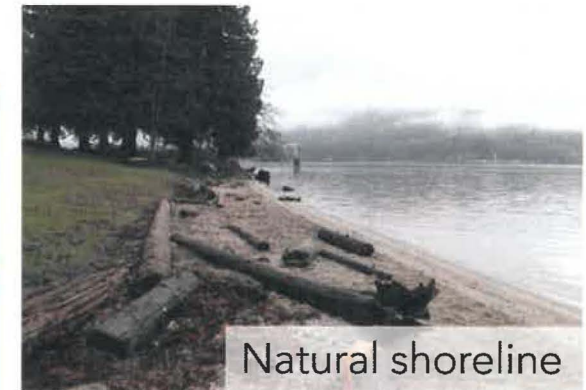
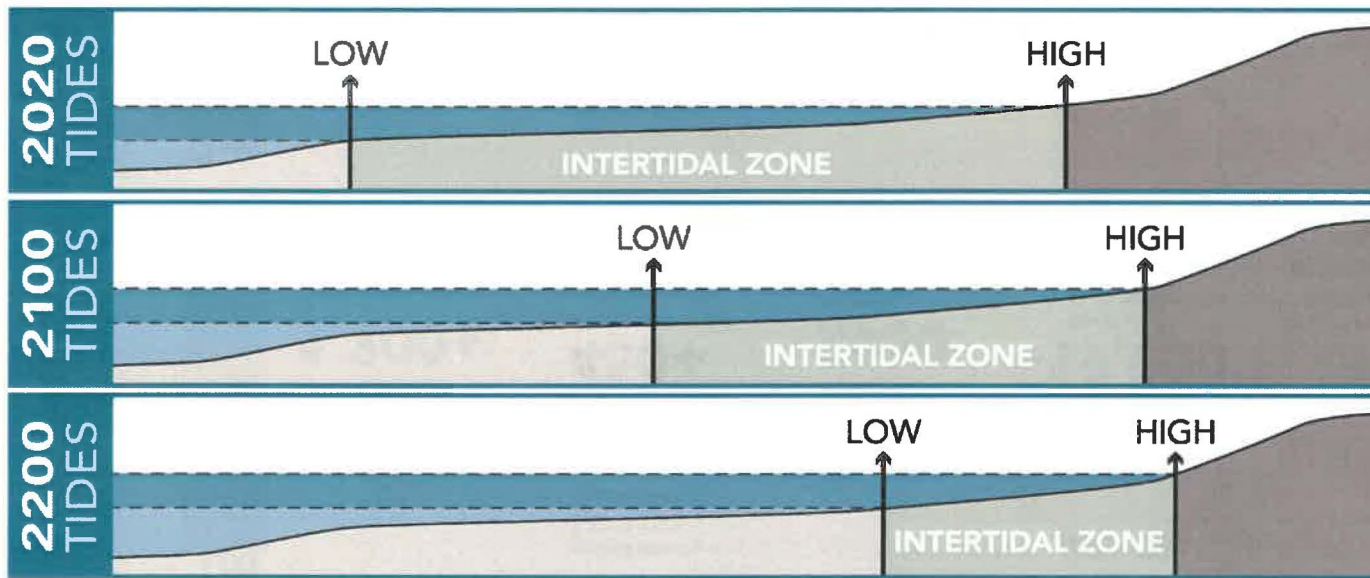
During major storm (10% annual probability), whole study area

2m  
sea level rise



During extreme storm (0.5% annual probability), whole study area

# Consequences: Intertidal Habitat



# Adaptation Approaches

Likely a combination of approaches



# North Shore Adaptation Measures Toolkit

- Toolkit tailored to North Shore context
- 26 adaptation measures



# Adaptation Measures Toolkit Examples



Nature-based measures for waves & erosion



Storm water management



Land raising



Land reshaping



Building flood-proofing

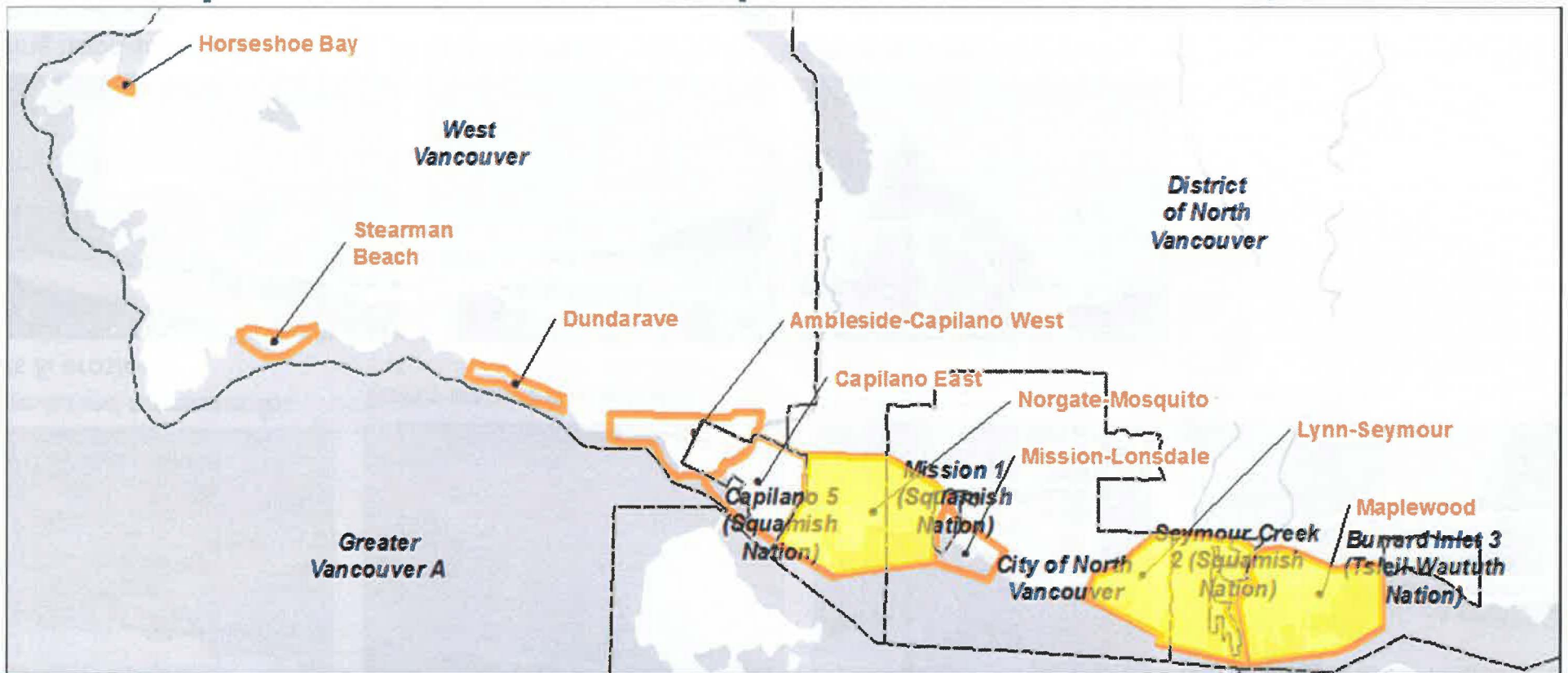


Setback dike



Pump stations

# Comprehensive Adaptation Planning Zones





# Implementation Actions

1. Continue North Shore sea level rise working group
2. Build knowledge and fill gaps
3. Create Comprehensive Adaptation Plans for 3 zones  
Norgate, Lynn-Seymour, Maplewood
4. Update regulations & policies (e.g. coastal DPA)
5. Continue building public awareness
6. Coordinate with other governments



## Next step

- Bring final strategy to Regular Meeting for Council consideration



## **2021 Financial Plan Workshop**

Materials to be circulated via agenda addendum

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