AGENDA INFORMATION		Dept. Manager	GM/ Director	CAO
☐ Regular Meeting	Date:			
☐ Other:	Date:			

The District of North Vancouver
REPORT TO COUNCIL

January 24, 2022
File: 13.6770/Climate Change/File

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SUBJECT: Reducing Construction and Demolition Waste

RECOMMENDATION:

THAT Council direct staff to proceed with stakeholder engagement regarding potential regulations to increase the recycling and reuse of construction and demolition waste.

REASON FOR REPORT:

To provide Council with background information regarding opportunities to reduce construction and demolition waste and to request Council's direction to proceed with stakeholder consultation regarding potential reuse and recycling regulations in this sector.

SUMMARY:

This report provides information on the benefits and challenges of reducing construction and demolition waste and provides an overview of potential approaches to encourage the reuse and recycling of these materials. Waste from construction and demolition represents the largest category of waste sent to disposal in our region. Recycling and reuse of building materials reduces emissions from the extraction, manufacturing, and transportation of building materials, conserves landfill space and resources, and can create new economic opportunities. Staff are seeking Council direction to consult with industry stakeholders such as builders, waste haulers, and processing facilities regarding potential regulations to encourage the reuse and recycling of these materials.

BACKGROUND/CONTEXT:

The District's 2019 Community Energy and Emissions Plan identifies reducing construction and demolition waste through recycling and salvage as a key strategy in reducing emissions associated with climate change. The District's 2021 Targeted Official Community Plan Review Action Plan further recommends that deconstruction and recycling should be incentivized or required.

Waste from the construction and demolition (C&D) sector comprises the largest category of waste sent to landfills in our region (Figure 1). The District has a potential opportunity to reduce this waste and increase material reuse through implementing regulations to require C&D recycling and material salvage.

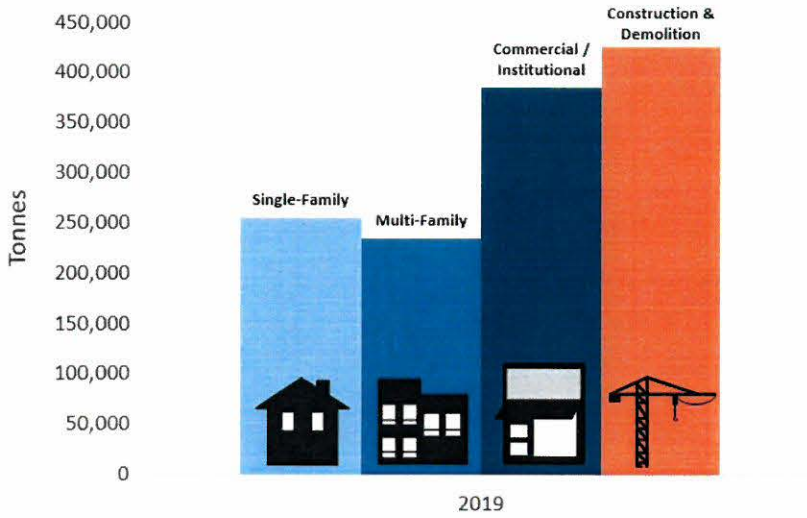


Figure 1. Waste disposed by sector in 2019 (Metro Vancouver)

Most construction and demolition waste is generated through demolition with a smaller proportion associated with the construction process itself. When a home is demolished, with the exception of some hazardous or high value items (gypsum, metals), materials are not typically well separated on the site, making recycling a challenge as materials are mixed together and hauled away for disposal.

However, through recycling, materials can be separated on the site for subsequent transport to a private facility for processing and conversion into new products. Examples of recyclable building materials include clean wood, asphalt, concrete, bricks, and metal.

To date, five municipalities in the region have implemented regulatory measures requiring the recycling of such waste. Such bylaws include a refundable fee to incentivize the return of documents from the various facilities to demonstrate compliance.

Deconstruction

While recycling requirements reduce waste sent to landfill, there is increasing recognition of a new zero waste hierarchy which emphasizes the reuse of materials (Figure 2) and replaces the traditional 3R (reduce, reuse, recycle) model. This hierarchy provides guidance for developing systems or products to move closer to zero waste. Policy and action at the top of the hierarchy (rethink/redesign, reduce, reuse) is emphasized.

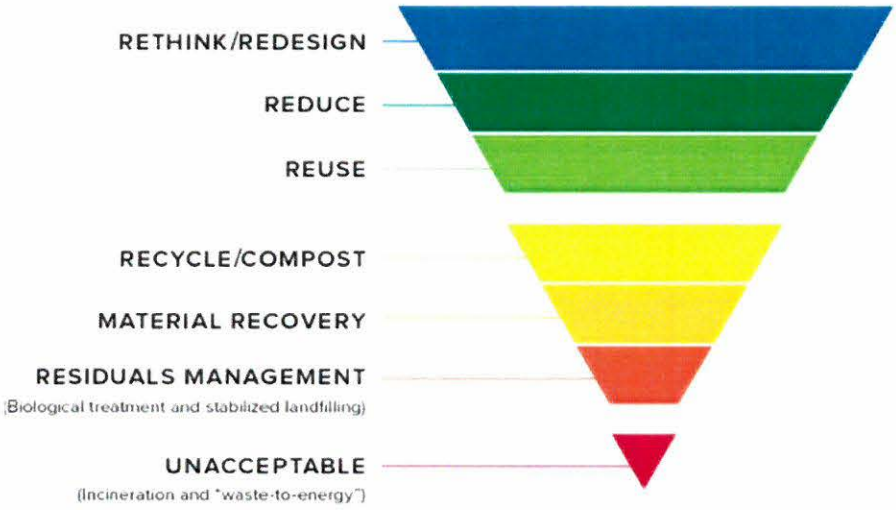


Figure 2. Zero Waste Hierarchy (*Source: Zero Waste International Alliance*)

Currently, wood in our region is recycled as biomass fuel or landscape mulch, which does not necessarily result in highest and best use of the material. A few cities including Vancouver and Portland have thus gone beyond recycling requirements to encourage material salvage, or "deconstruction" of older homes.

Deconstruction involves the systematic disassembly of a structure and its components to maximize salvage of valuable materials such as old growth lumber. Other reusable materials include cabinets, doors, hardwood flooring, plumbing fixtures, and windows. At a building's end of life, deconstruction can divert at least 80% of building materials from the landfill.

There is an opportunity therefore to advance the District's zero waste goals through potential policies to increase both recycling and deconstruction.

ANALYSIS:

On average, about 100 demolition permits for single family dwellings are issued by the District each year. Figure 3 depicts the number of demolition permits issued for single-family homes between 2016 and 2020. Older homes contain materials that are easier to separate compared to composite building materials used for more modern construction. A number of older homes are demolished each year.

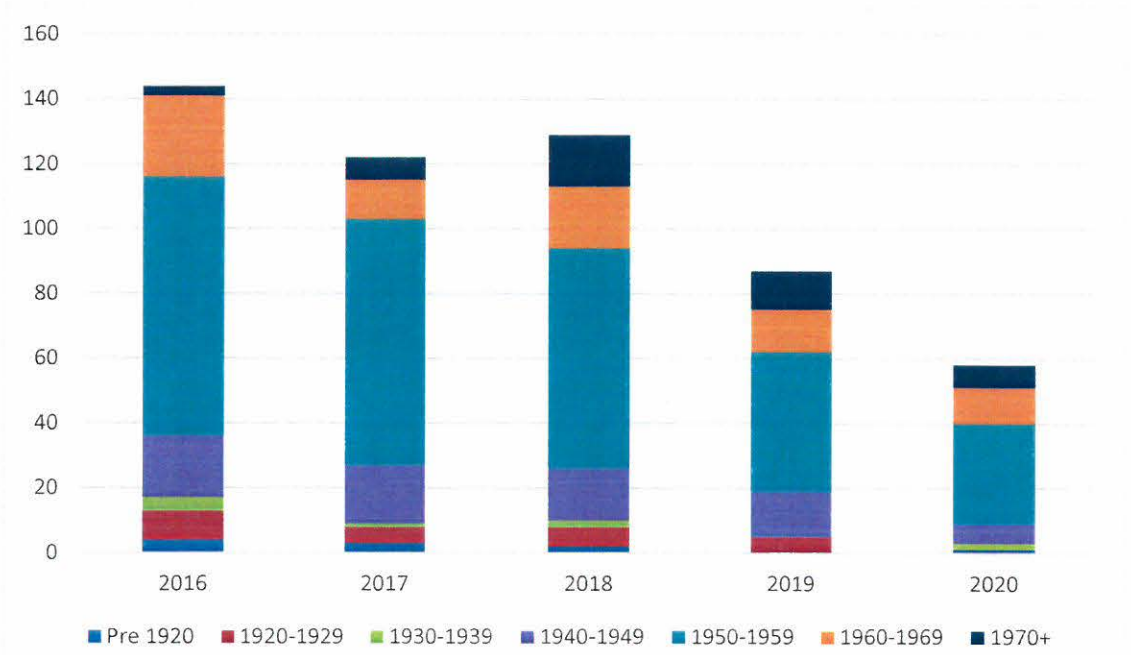


Figure 3. Number of single family dwelling demolition permits issued by decade of construction

Benefits

Recycling and reuse of building materials conserves landfill space and reduces emissions from the extraction, manufacturing, and transportation of virgin materials. Recycling and deconstruction creates economic opportunities (e.g., building disassembly, secondary product wood workers). There are also health benefits related to deconstruction as a result of the disassembly process, most of which is carried out by hand, compared to mechanical demolition. Less dust is generated on site and hazardous materials abatement is often more thorough which protects workers and the surrounding community.

Challenges

Recycling and reuse can both reduce and increase costs for builders. Waste facilities typically charge higher tipping fees for mixed loads of garbage while fees for separated recyclable materials are lower. Reclaimed wood can be donated resulting in a tax receipt and associated savings. However, materials diversion does add time and complexity to the construction process. Another challenge is the shortage of industrial space in the region for material storage and processing.

Next Steps: Stakeholder Consultation

Given the waste diversion potential in this sector, staff recommend that the District proceed with further stakeholder consultation and local market research to better understand opportunities and challenges. Currently five municipalities in the region (Vancouver, Richmond, New Westminster, Port Moody, and Surrey) have implemented recycling regulations, and Vancouver has implemented a deconstruction requirement for pre-1910 homes. Consultation will explore a recycling requirement and a potential deconstruction requirement for residential buildings of a certain age.

Timing/Approval Process:
Should Council endorse the report recommendation, staff would proceed with stakeholder consultation and would report back to Council with recommendations and a potential regulation for consideration.

Financial Impacts:
Should Council endorse the report recommendation, policy development and consultation would be completed using existing resources. Resource impacts including additional technical and administrative staff support from any proposed regulations would be identified and brought forward for consideration by Council through the long-range financial planning process.

Environmental Impact:
Reducing demolition waste and increasing material salvage reduces waste sent for disposal while reducing resource use and emissions associated with the use of materials which have to be extracted, processed/manufactured, and transported.

Public Input:
Engagement will be conducted with key stakeholders in the construction and demolition sector including developers and home builders, material recycling and salvage service providers, and recycling and processing facilities. This topic was reviewed by the District's new Climate Action Committee at the January 2022 meeting.

Conclusion:
Staff are seeking Council's direction to proceed with stakeholder engagement regarding potential regulations to reduce construction and demolition waste. Salvage and recycling regulations support the diversion of waste from landfill, reinforcing the District's commitment towards zero waste and shifting towards a more circular economy.

Options:
1. THAT Council direct staff to proceed with stakeholder engagement regarding potential regulations to increase the recycling and reuse of construction and demolition waste (staff recommendation).
2. THAT Council provide alternate direction.
3. THAT no action be taken at this time.

Respectfully submitted,

Bo Ocampo
Environmental Sustainability Specialist

Brett Dwyer
Assistant General Manager, Regulatory Review and Compliance

REVIEWED WITH:

				External Agencies:	
❑ Community Planning	____	❑ Clerk's Office	____	❑ Library Board	____
❑ Development Planning	____	❑ Communications	____	❑ NS Health	____
❑ Development Engineering	____	❑ Finance	____	❑ RCMP	____
❑ Utilities	____	❑ Fire Services	____	❑ NVRC	____
❑ Engineering Operations	____	❑ ITS	____	❑ Museum & Arch.	____
❑ Parks	____	❑ Solicitor	____	❑ Other:	____
❑ Environment	____	❑ GIS	____		
❑ Facilities	____	❑ Real Estate	____		
❑ Human Resources	____	❑ Bylaw Services	____		
❑ Review and Compliance	____	❑ Planning	____		
❑ Climate and Biodiversity	____				

ATTACHMENT 1

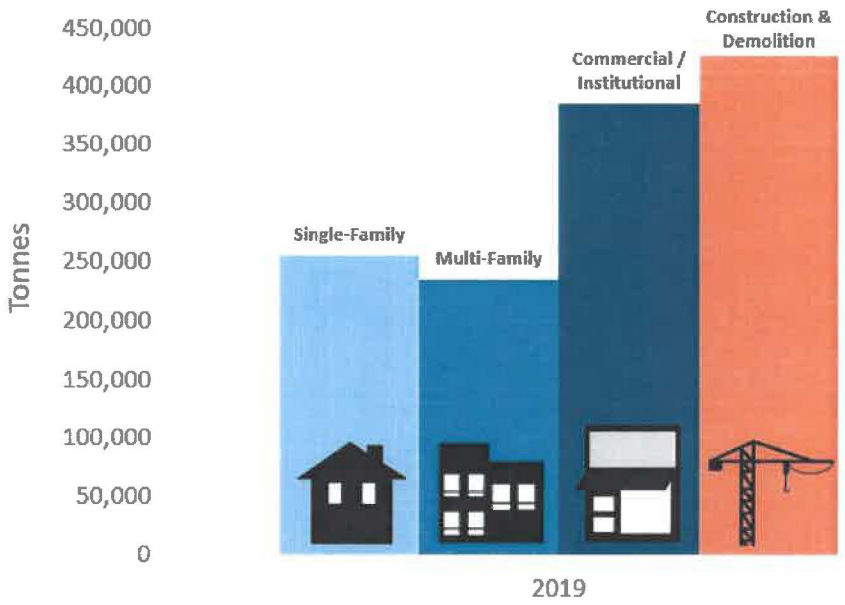
Reducing Construction and Demolition Waste

February 7, 2022

DISTRICT OF NORTH VANCOUVER

Background

Waste from the construction and demolition sector comprises the largest category of waste sent to landfills in our region



Waste disposed by sector in 2019 (Metro Vancouver)

Background

Source: Sea to Sky Removal

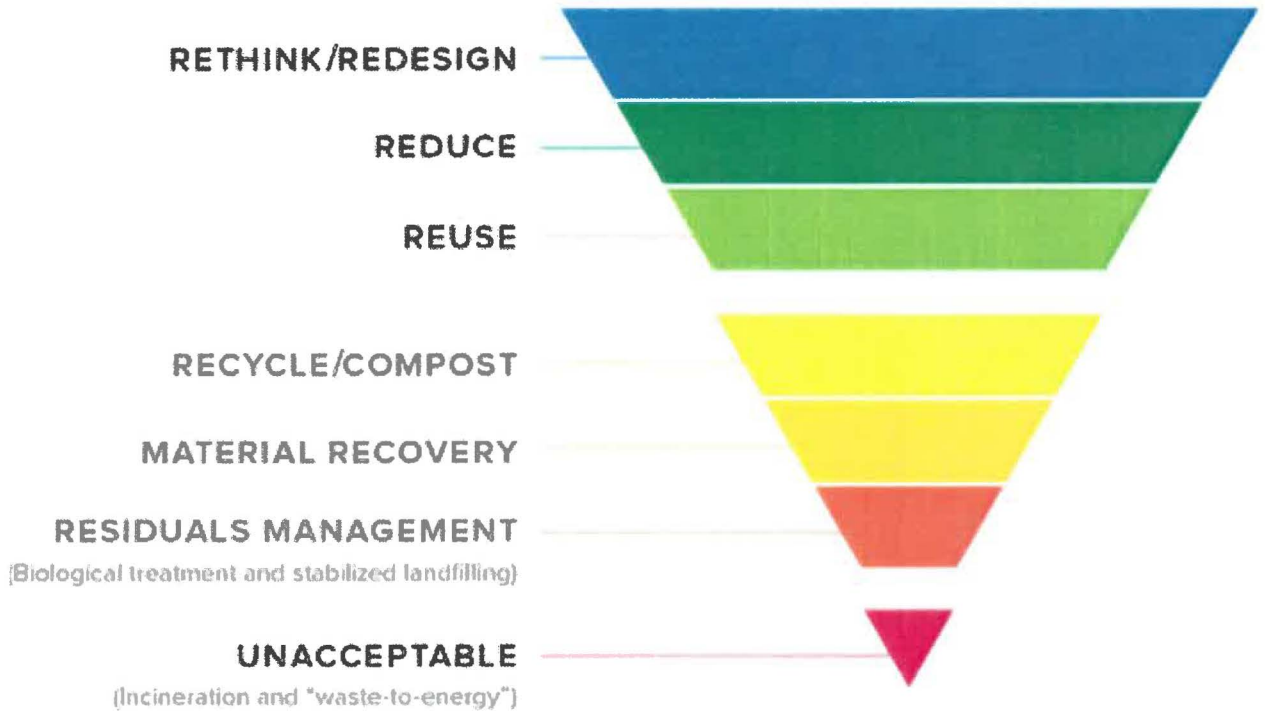
Background

Where do the materials go for recycling and reuse?

Source: Sea to Sky Removal

Source: Ecowaste e-brochure

Background



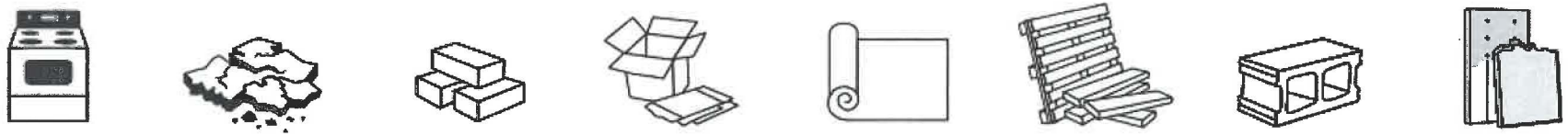
Benefits

- Conserves landfill space and reduces emissions from the extraction, manufacturing, and transportation of virgin materials
- Creates economic opportunities (e.g., building disassembly, secondary product wood workers)
- Health benefits which result from the disassembly process – thorough hazardous materials abatement and minimization of dust

Source: Welcome Parlour North Vancouver

Challenges

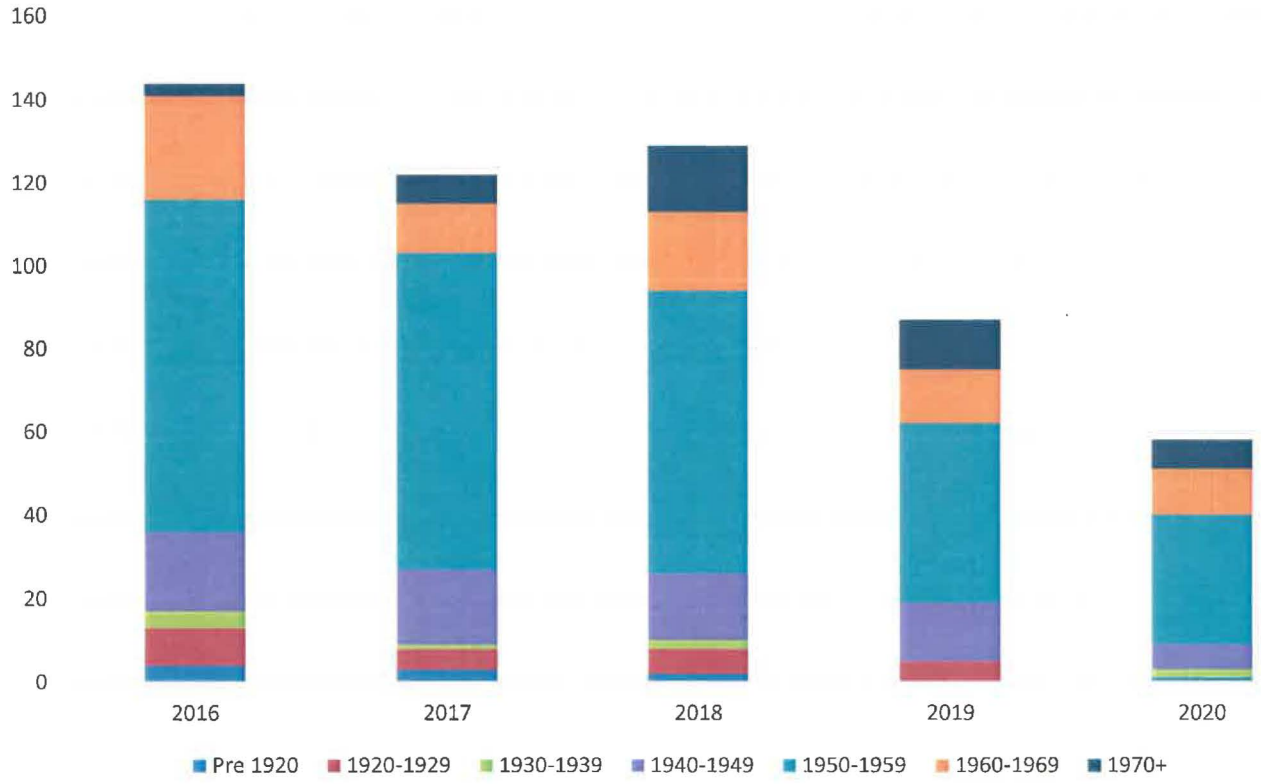
- Recycling and reuse can both reduce and increase costs for builders by adding time and complexity to the building removal process
- Shortage of industrial space in the region for material storage and processing



Regional Context

Municipality	Recycling Requirement
Port Moody	• All demo permits
Vancouver	• Pre-1950 single-family homes (deconstruction for pre-1910 and heritage listed homes)
Richmond	• Single-family homes
New Westminster	• Single-family homes and duplexes
Surrey	• All demolition and new construction permits

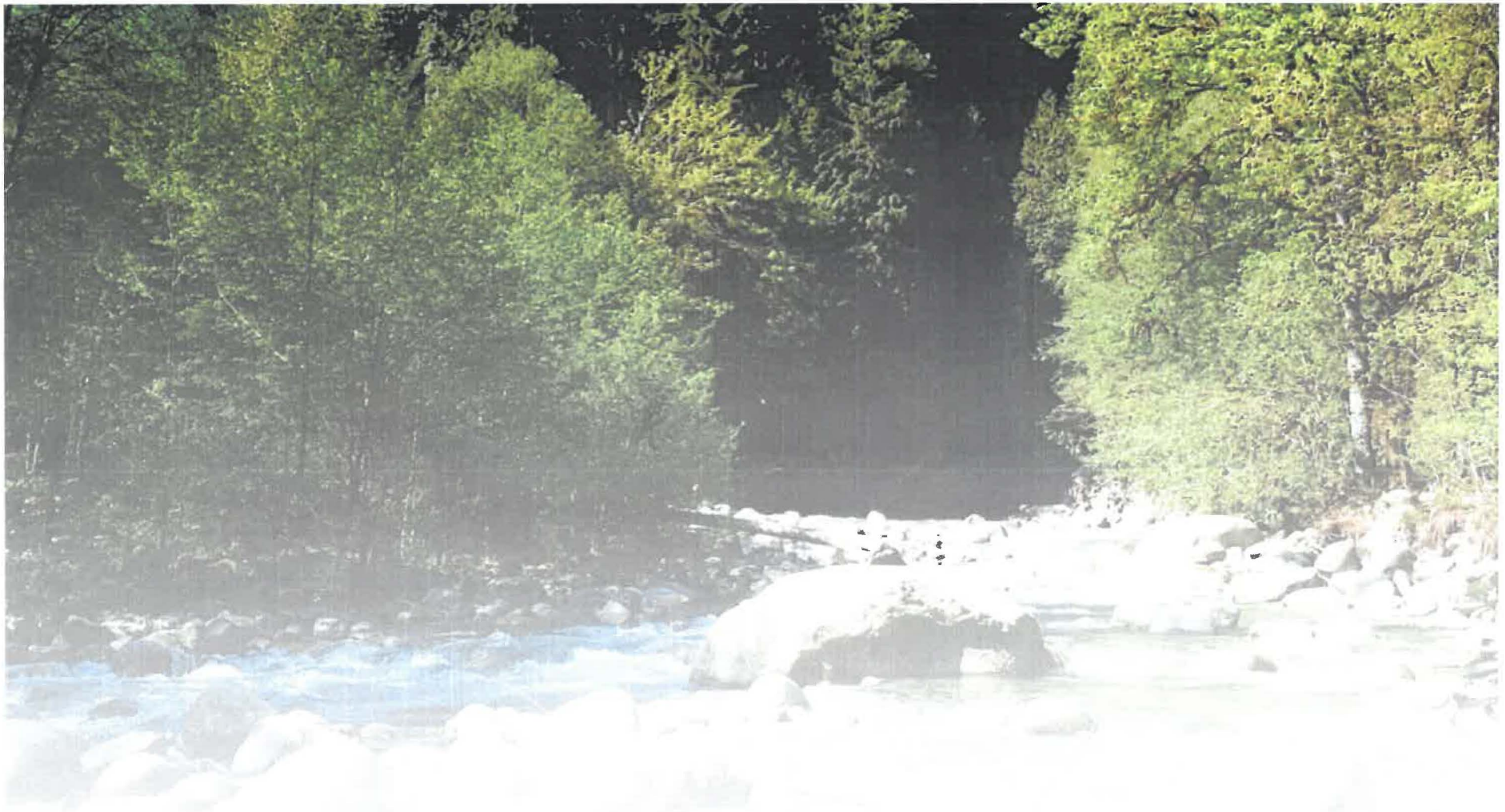
DNV Context



Number of single family dwelling demolition permits issued by decade of construction

Next Steps

Stakeholder engagement to understand opportunities and challenges



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