

Council Update #2

Squamish Integrated Flood Hazard Management Plan



Agenda

- Purpose
- Presentation Format
- Scope of work
- Sea Dike Discussion



Project Scope

1 – Background Analysis



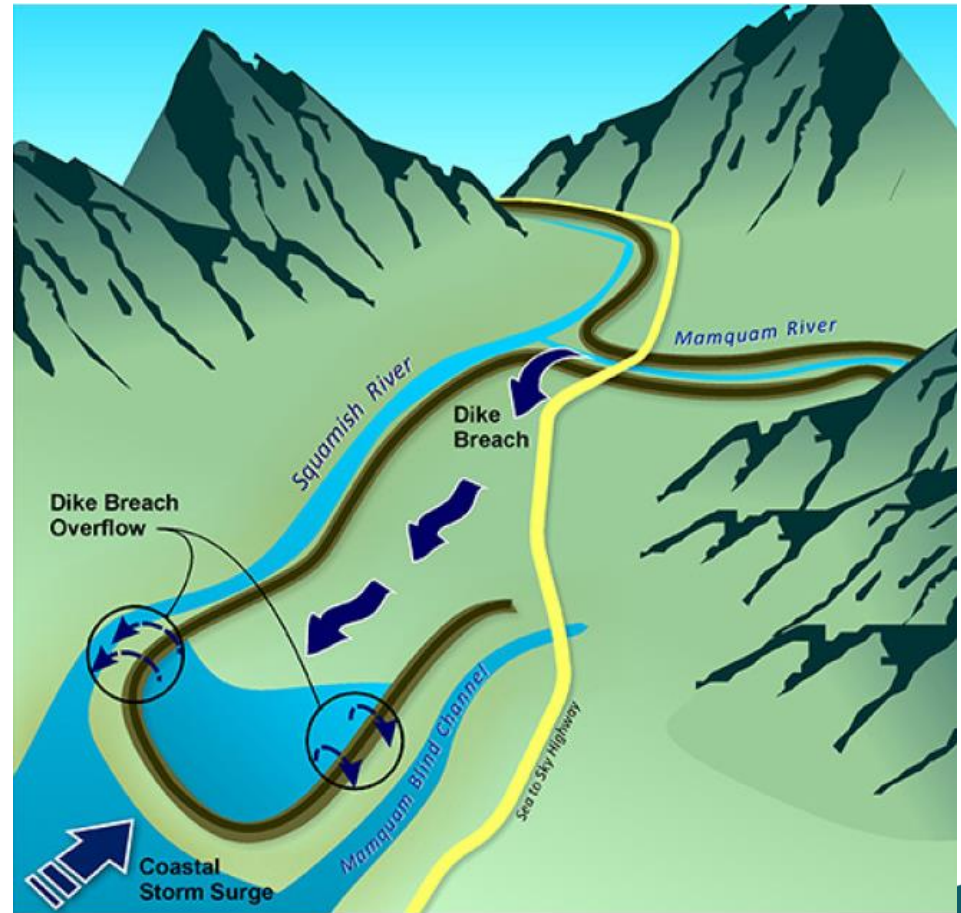
2 - Coastal Flood
Mitigation Options



3 – River Floodplain
Modeling and Risk Analysis



4 – Integrated Flood Hazard
Management Plan



Sea Dike Introduction

- Why is it important?
 - Community Planning
 - Financial Planning

Why “Protect”?

- Mitigation Options:
 - Protect
 - Accommodate
 - Retreat
 - Avoid
- “Protect” Business Case
- IFHMP recommendation:
Consider combination of strategies

Sea Dike Types

GreenShores



Seawall (vertical face)

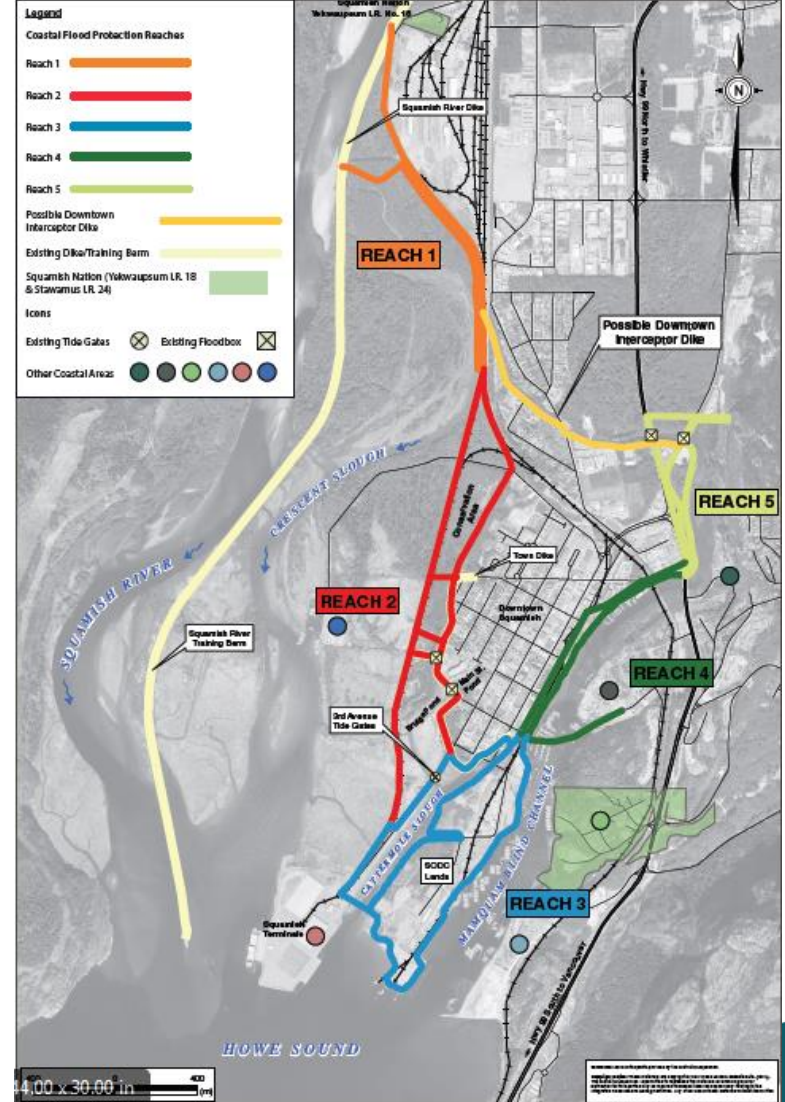


Earthfill Embankment



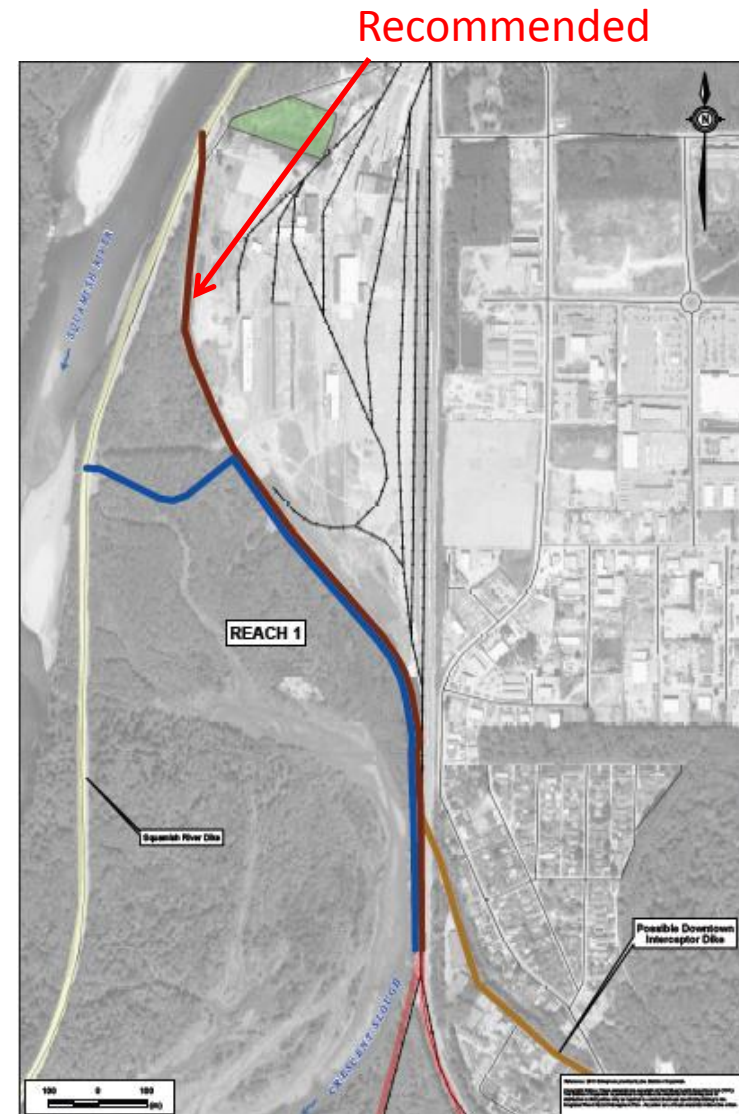
Sea Dike Alignment

- Separated into 5 'Reaches' for analysis
 - **Reach 1** – CN North Yards to Crescent Slough
 - **Reach 2** – Squamish Estuary (Crescent Slough to 3rd Avenue)
 - **Reach 3** – Cattermole Slough (3rd Ave to SODC)
 - **Reach 4** – Lower Mamquam Blind Channel (SODC to Hwy)
 - **Reach 5** – Upper Mamquam Blind Channel (Hwy to Smoke Bluffs)



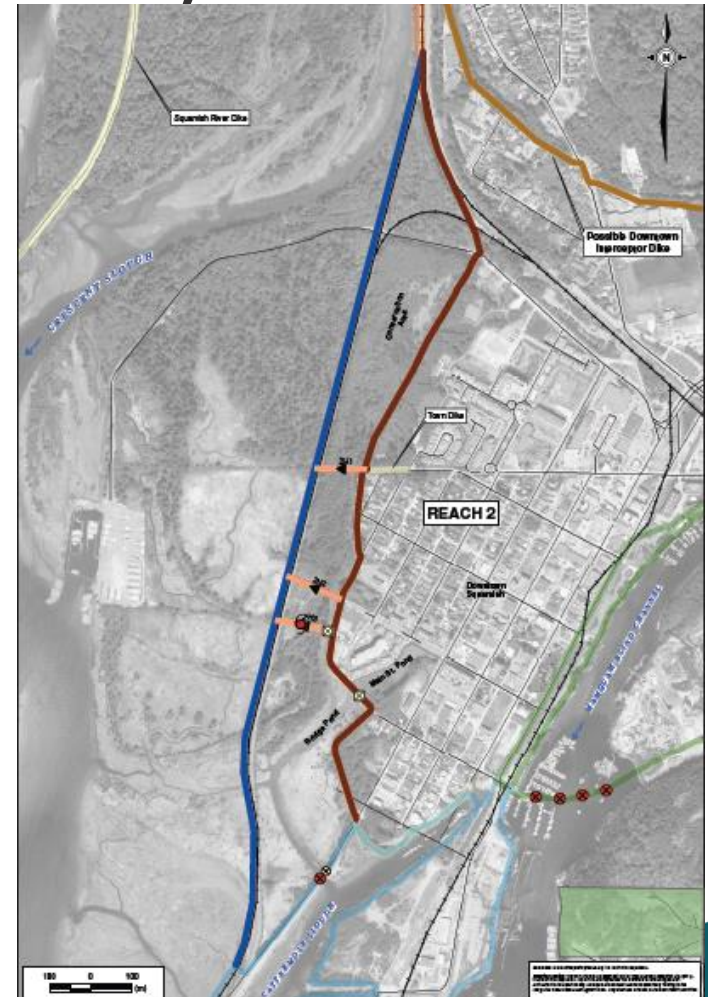
Reach 1 – CN North Yards to Crescent Slough

- 2 Options:
 - Gov't Road
 - Spit Access Rd
- Considerations:
 - Environmental concerns
 - Dike types
 - Current risk
 - Downtown protection
- Recommendation: Gov't Rd



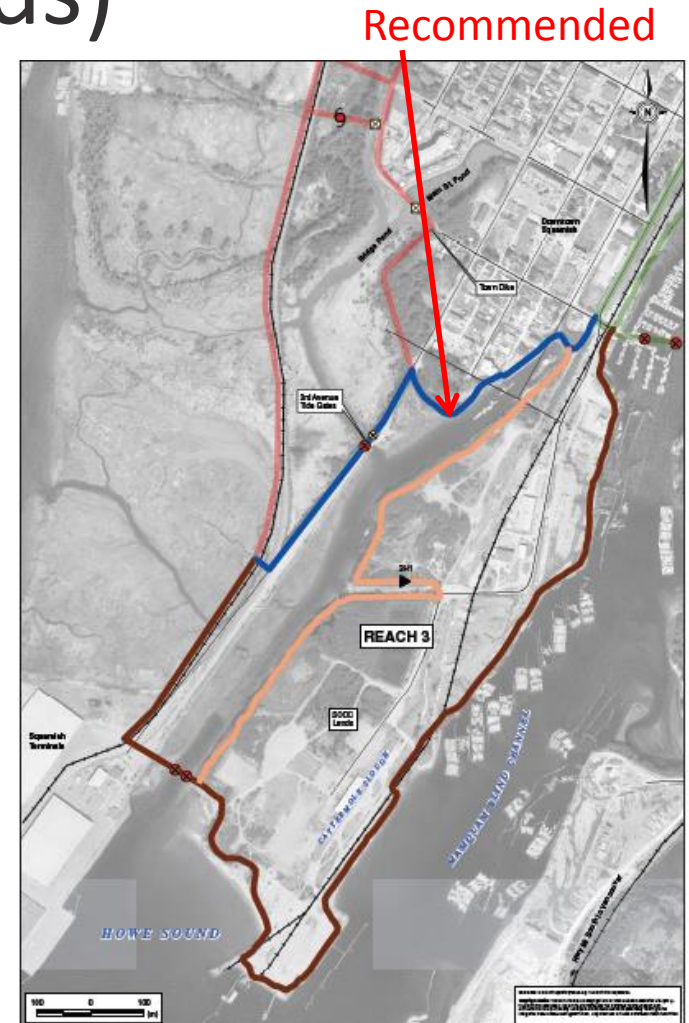
Reach 2 – Squamish Estuary (Crescent Slough to 3rd Ave)

- 2 main options:
 - 7th Ave Connector
 - Town Dike
- Considerations:
 - Environmental concerns
 - Transportation
 - Land Tenure
 - Drainage
 - Constructability
 - Potential environmental mitigation
- Recommendation: Defer



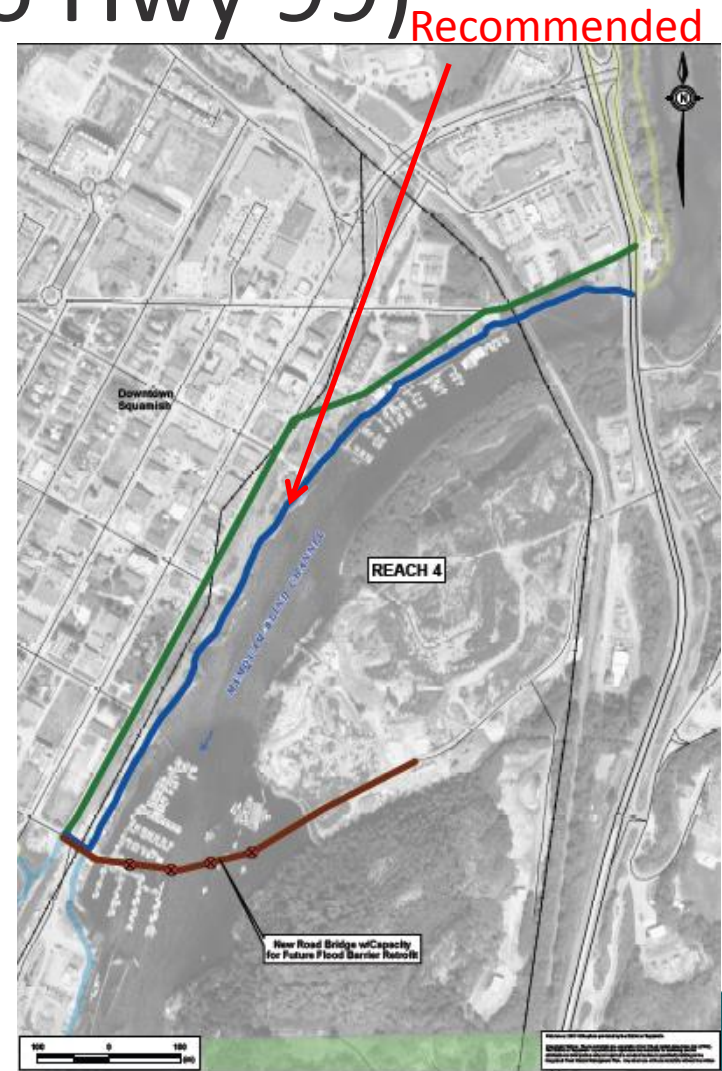
Reach 3 – Cattermole Slough (3rd Ave to SODC lands)

- 2 main options:
 - Cattermole Slough
 - SODC
- Considerations:
 - Cost
 - Complexity
 - Challenges
- Recommendation:
Cattermole



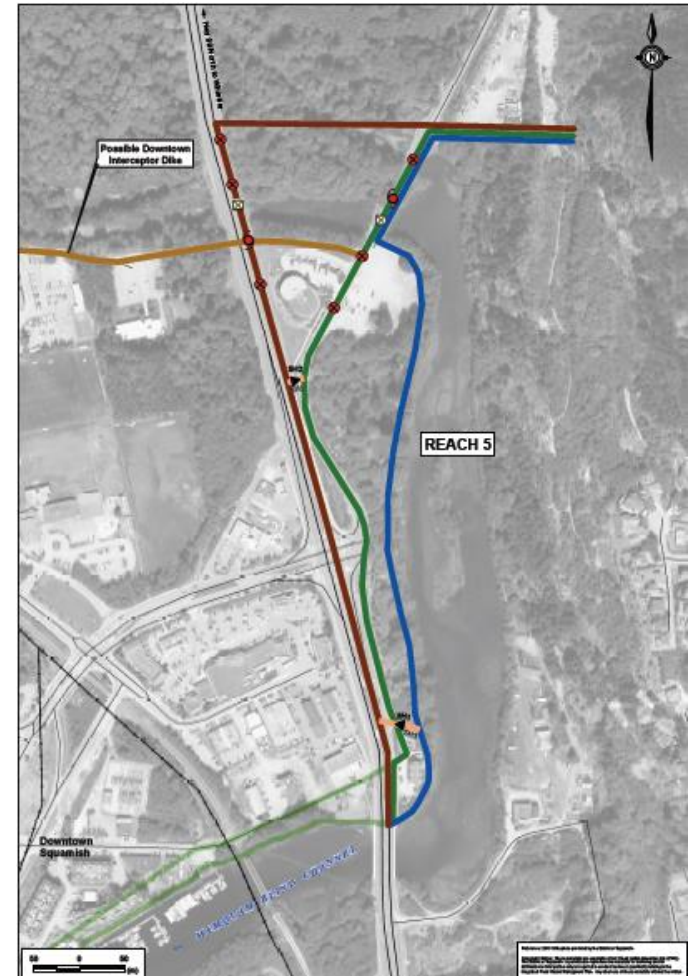
Reach 4 – Lower Mamquam Blind Channel (SODC to Hwy 99)

- 3 main options:
 - Shoreline
 - Flood Gates (and shoreline)
 - Setback Dike
- Considerations:
 - Dike type
 - Downtown revitalization
 - Challenges
 - Access
 - Efficiency
 - Complexity
 - Mireau
- Recommendation: Shoreline



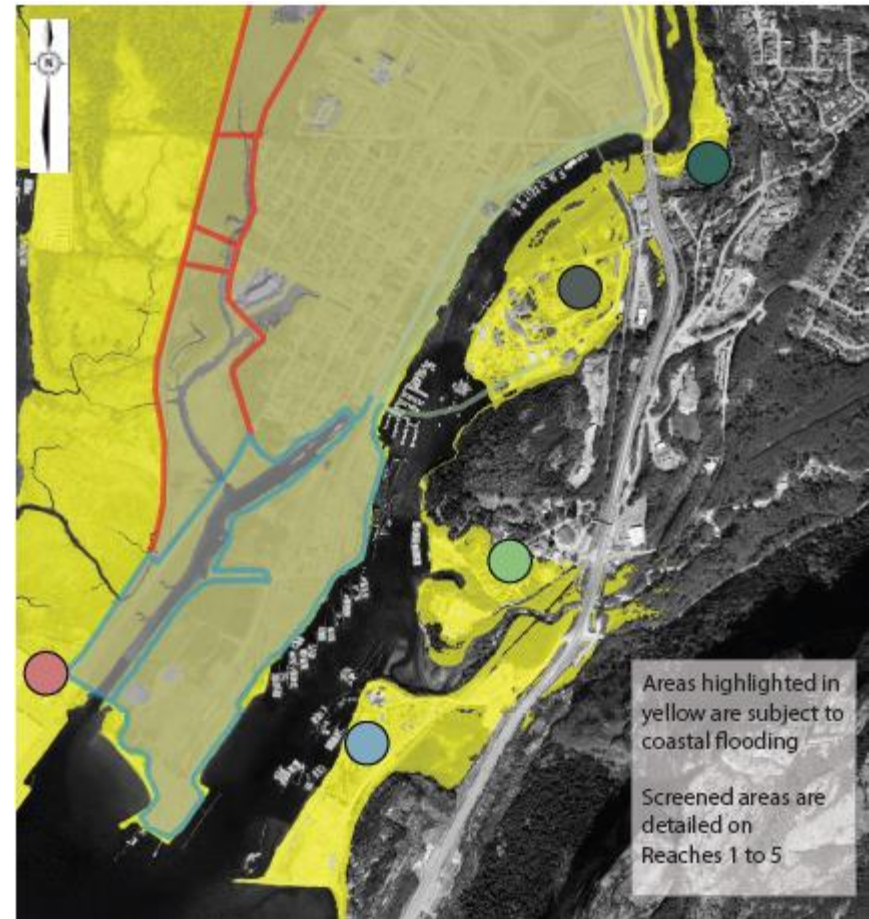
Reach 5 – Upper Mamquam Blind Channel (Hwy 99 to Smoke Bluffs)

- Options:
 - Shoreline
 - Highway
 - Logger's Lane
 - Hybrids
- Considerations:
 - Existing and future development
 - Transportation
 - Cost
- Recommendation: Consider hybrid. Tailor based on development plans.



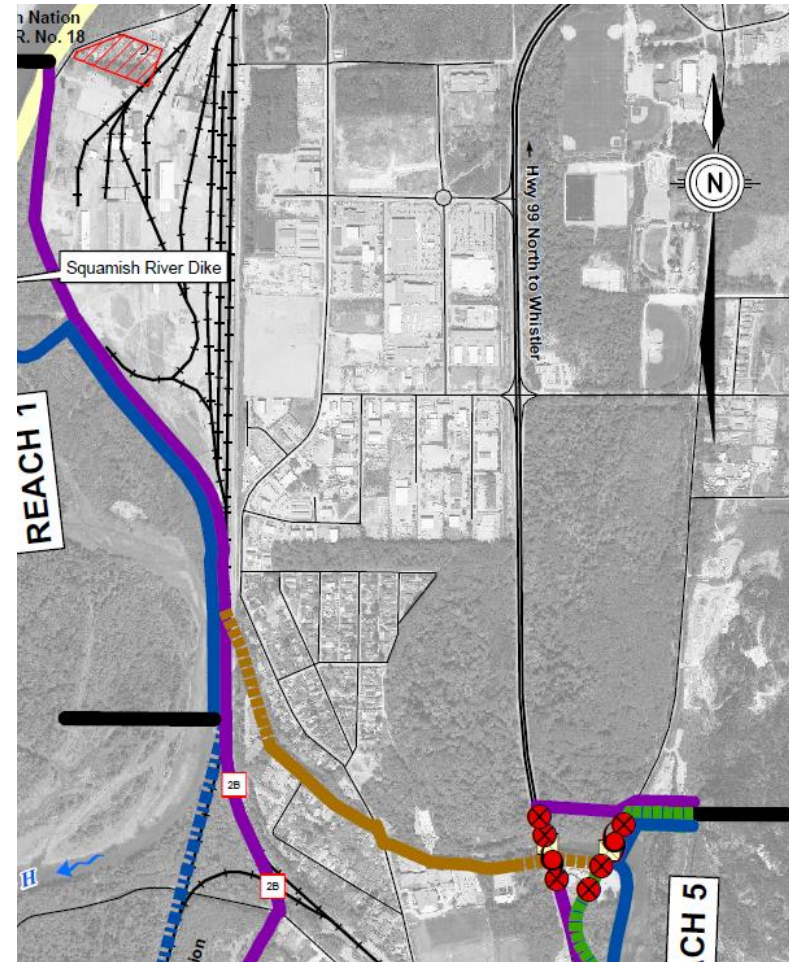
Unconnected Coastal Floodplain Areas

- “Unconnected”?
- Affected sites:
- Considerations:
 - Not part of overall strategy
 - Based on development
 - Mitigation options
- Recommendation: Case by case basis



Interceptor Dike

- Concept
- Challenges:
 - Downtown only?
 - Complexity
 - Transfer of risk
- Alternate concept: Improve river dike protection
- Benefits:
 - Greater area protected
 - Avoids challenges/transfer of risk
- No easy solutions
 - Investment, encroachment will still be required



Implementation

- Preliminary cost estimate is \$50M+
 - Does not need to happen overnight
- Once strategy finalized, will consider implementation in greater detail
- Considerations:
 - Highest risk areas first
 - Financial capability
 - Based on observed sea level rise
 - Rate of development

Next Steps

- Consult Squamish Nation
- Come back to Council with recommended sea dike alignment
- Proceed to River Floodplain Modeling and Risk Assessment

Questions?

