

How are Local Governments Responding to a Changing Climate?

Droughts and Floods: Communicating the 'New Normal' in the Cowichan

December 1, 2015



Presentation

1. How regional districts provide services
2. How we are responding to climate impacts
 - a) Communicating the New Normal
 - b) Regional watersheds characterization
 - c) Flood management
 - d) Watershed management
3. Listen to your reflections on how local government can support climate change adaptation



Senior government agencies involved in water governance

- water – Ministry of Environment and Ministry of Health
- agricultural lands – Ministry of Agriculture
- private forest lands – Managed Forest Council
- roads and highways – Ministry of Transportation and Infrastructure
- fish – DFO and Ministry of Environment

Collaboration is key



Agencies involved at the local level in water governance

- Water, land and ecosystems in traditional territories – First Nations
- Land use and community water supply – Local Government
- Watershed health protection and education – Stewardship Community
- Advice and education – Watershed Boards and Societies
- Water storage license holders, land holders – Industry

Collaboration is key





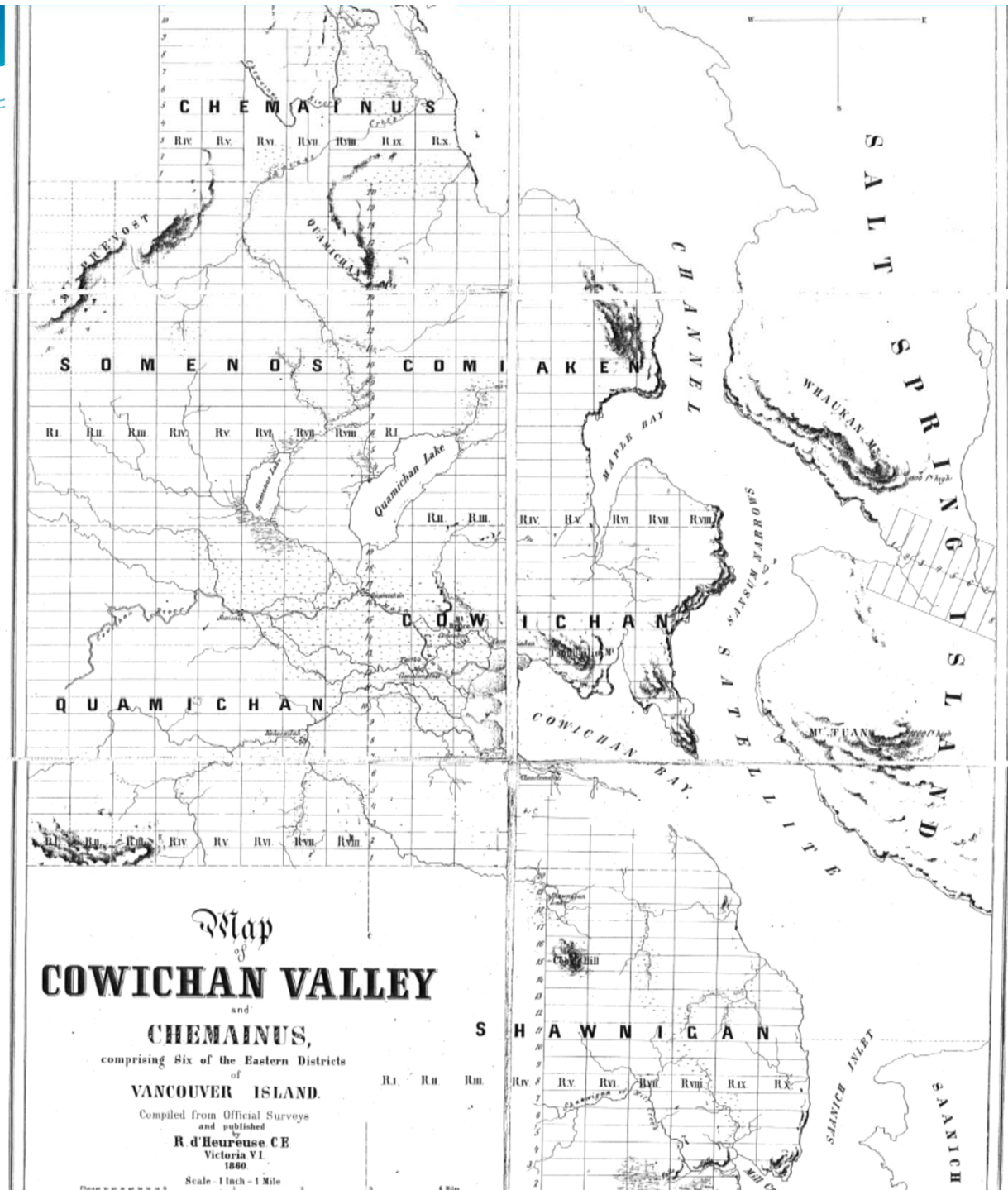
How regional districts provide services

- Regional Districts and Municipalities provide and pay for services very differently due to their legislation
- Services in a Regional District are determined by the regional board but only with the support of the electors
- The *Local Government Act* sets out procedures for obtaining elector assent

For 1000s of years the watersheds were home to ...

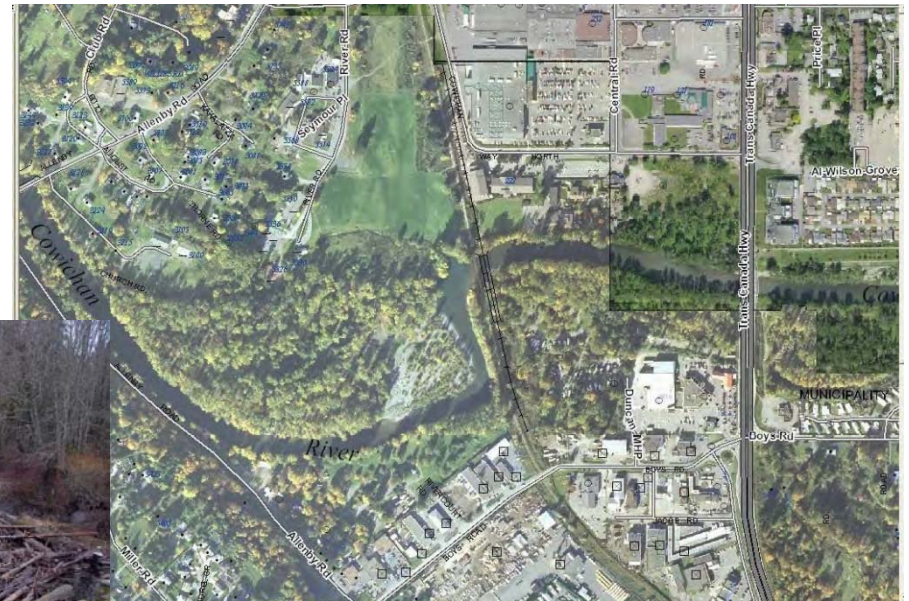
- Forests of massive fir & cedar
- Lakes and streams rich with salmon
- Tidal flats abundant with shellfish
- Clean and plentiful water
- Great villages of the Cowichan people





Over the past 150 years, there have been changes to the watersheds

- Clear cuts and young forests now dominate
- Upper watersheds and rivers are less stable
- People have moved into vulnerable areas
- Rivers have been constrained



Communicating the New Normal

Objective

- Unified communications vehicle

Vision

- Engaged citizens who *think and act* in accordance with the “new normal.”





DroughtSmart FloodSmart Resources Updates



current conditions

Provincial drought conditions (Vancouver Island) - Level 1 - Normal
No Water Restrictions in effect throughout Cowichan Region

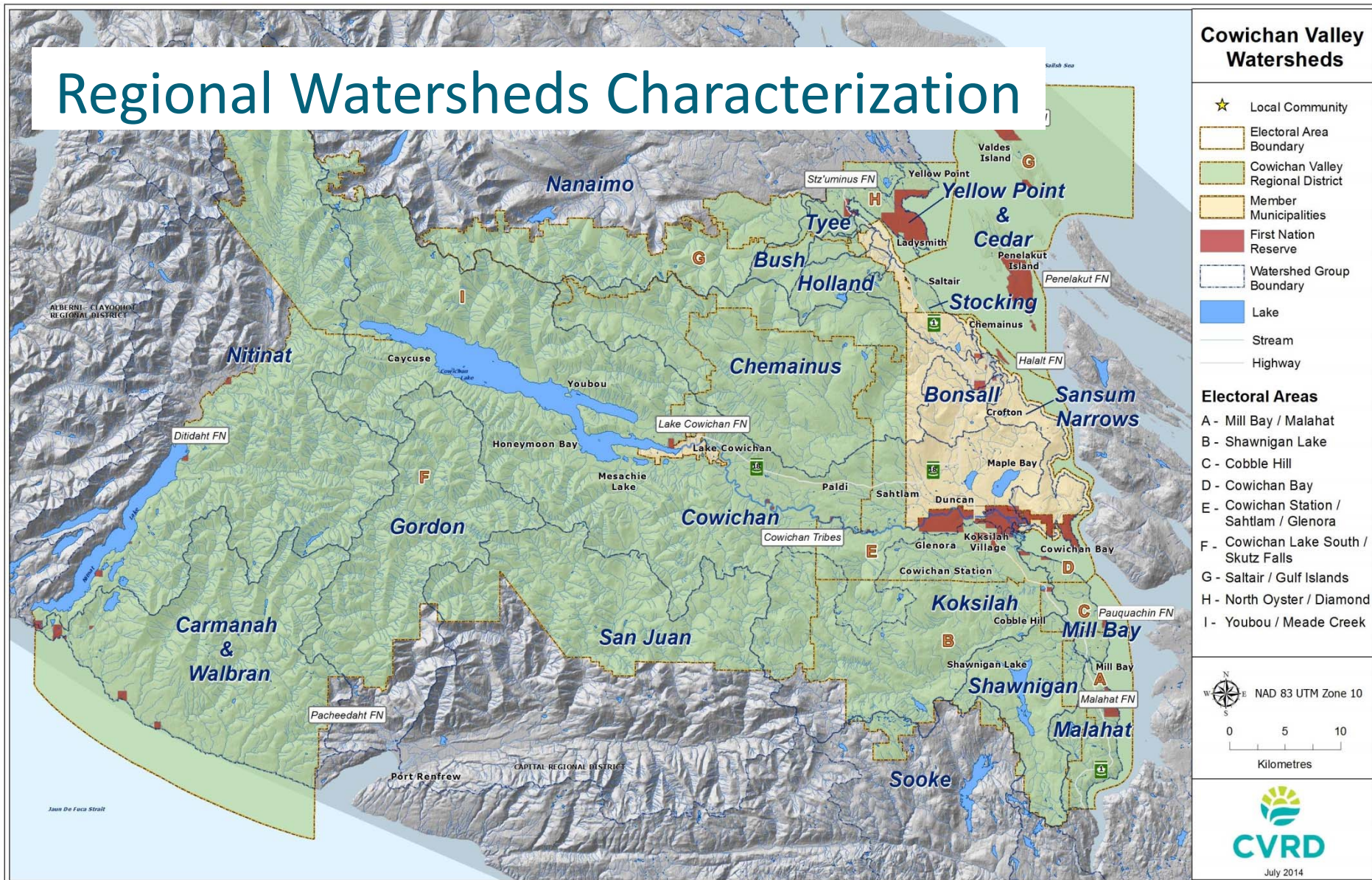


It's a **new normal**, Cowichan.

Summer drought and winter flooding are the 'new normal' in the Cowichan. We all have a role to play in managing our water supply to help our economy and our



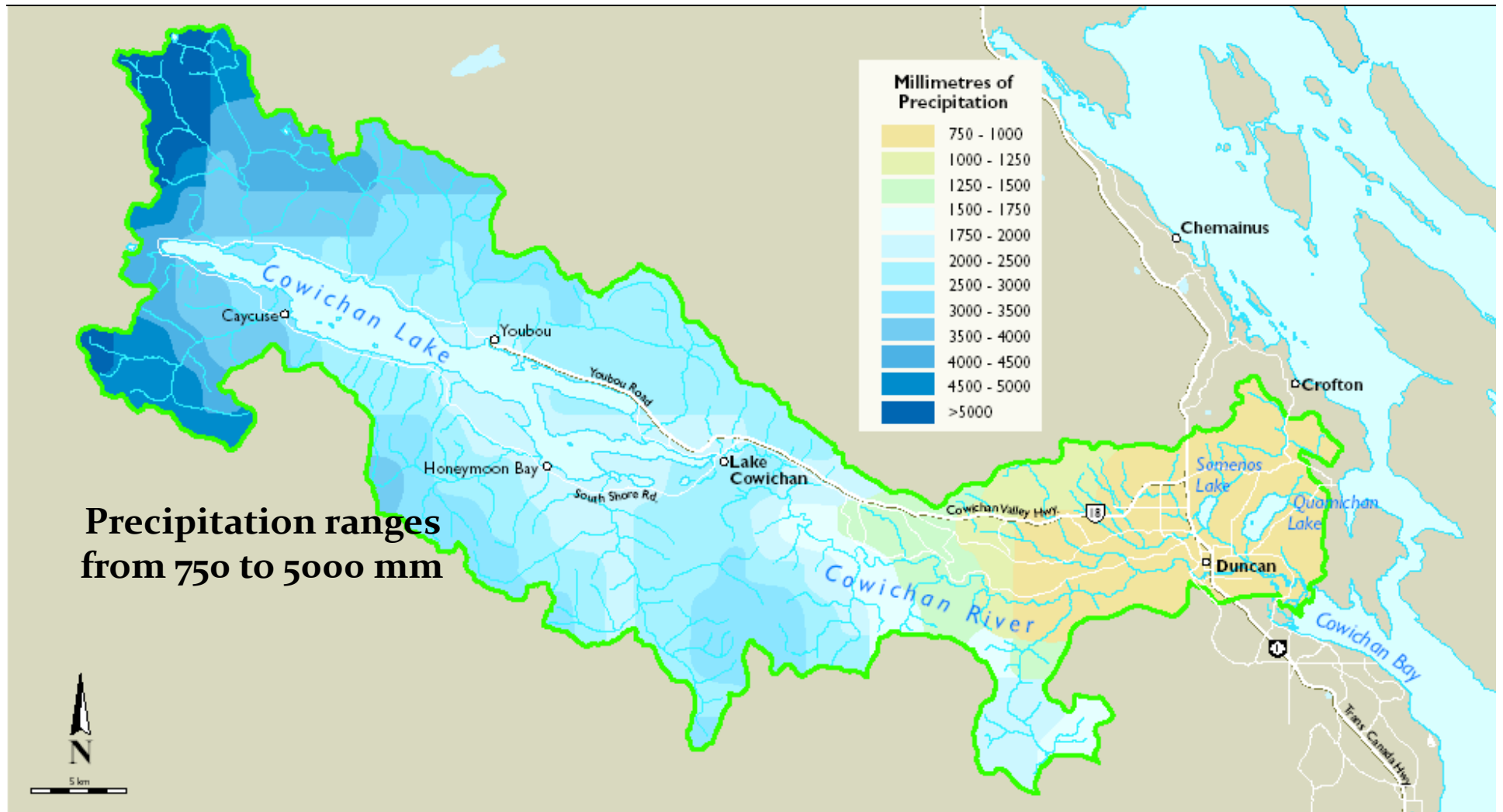
Regional Watersheds Characterization



What is the Flood Problem?

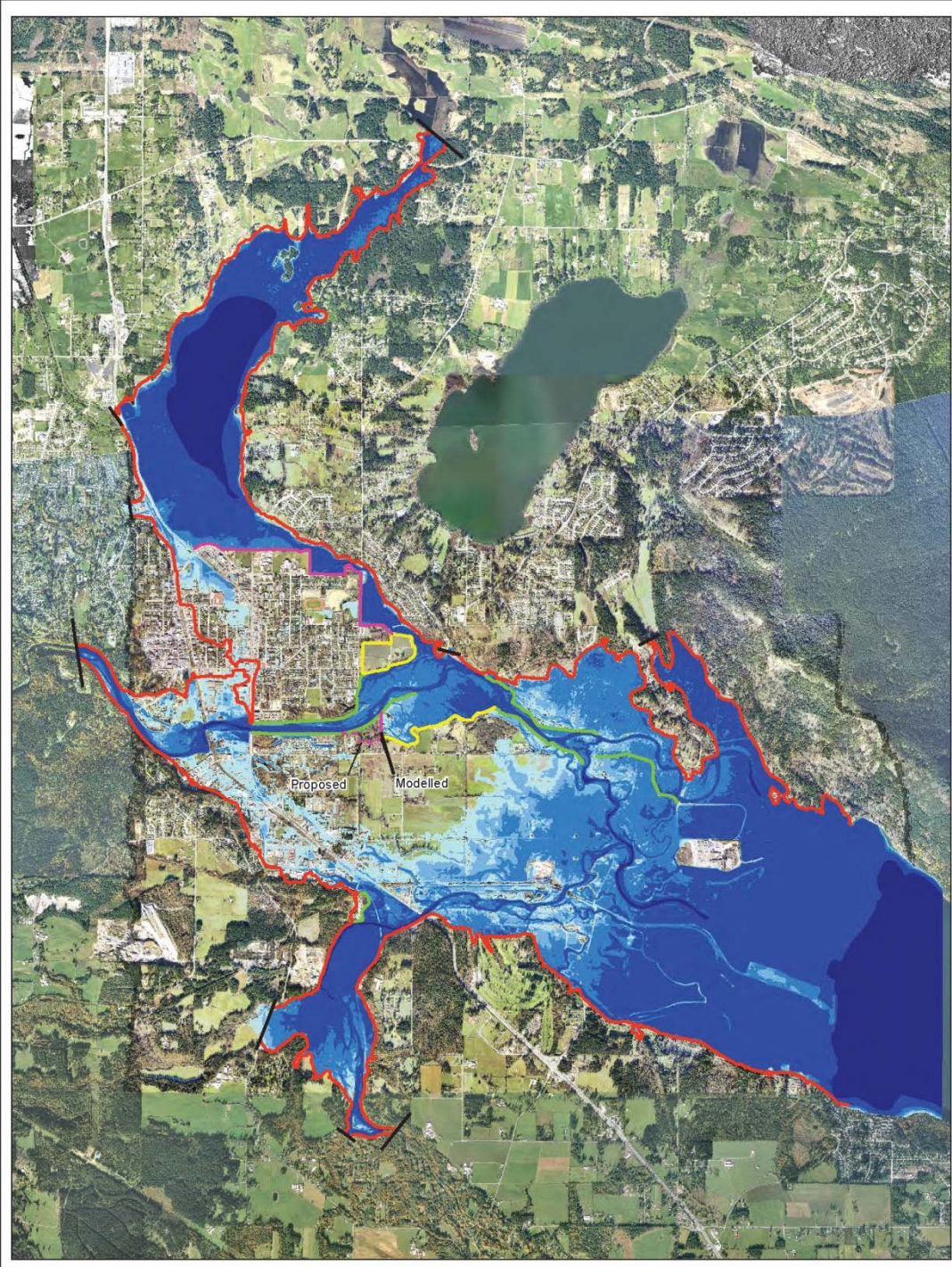


The Cowichan Basin











How are we responding to **flood**?

Responding to flood in the Cowichan watershed

- Large flow events
- Begin Integrated Flood Management Plan (IFMP)
- Complete IFMP and begin implementation including construction of dikes and sediment management
- Flood Management bylaw proposed
- Alternate approval process begins
- Alternate approval process closes
- Implement bylaw services

1979, 1986, 2007
2008 and 2009

2008

2009


April 8

October 14

December 2

2015

2016

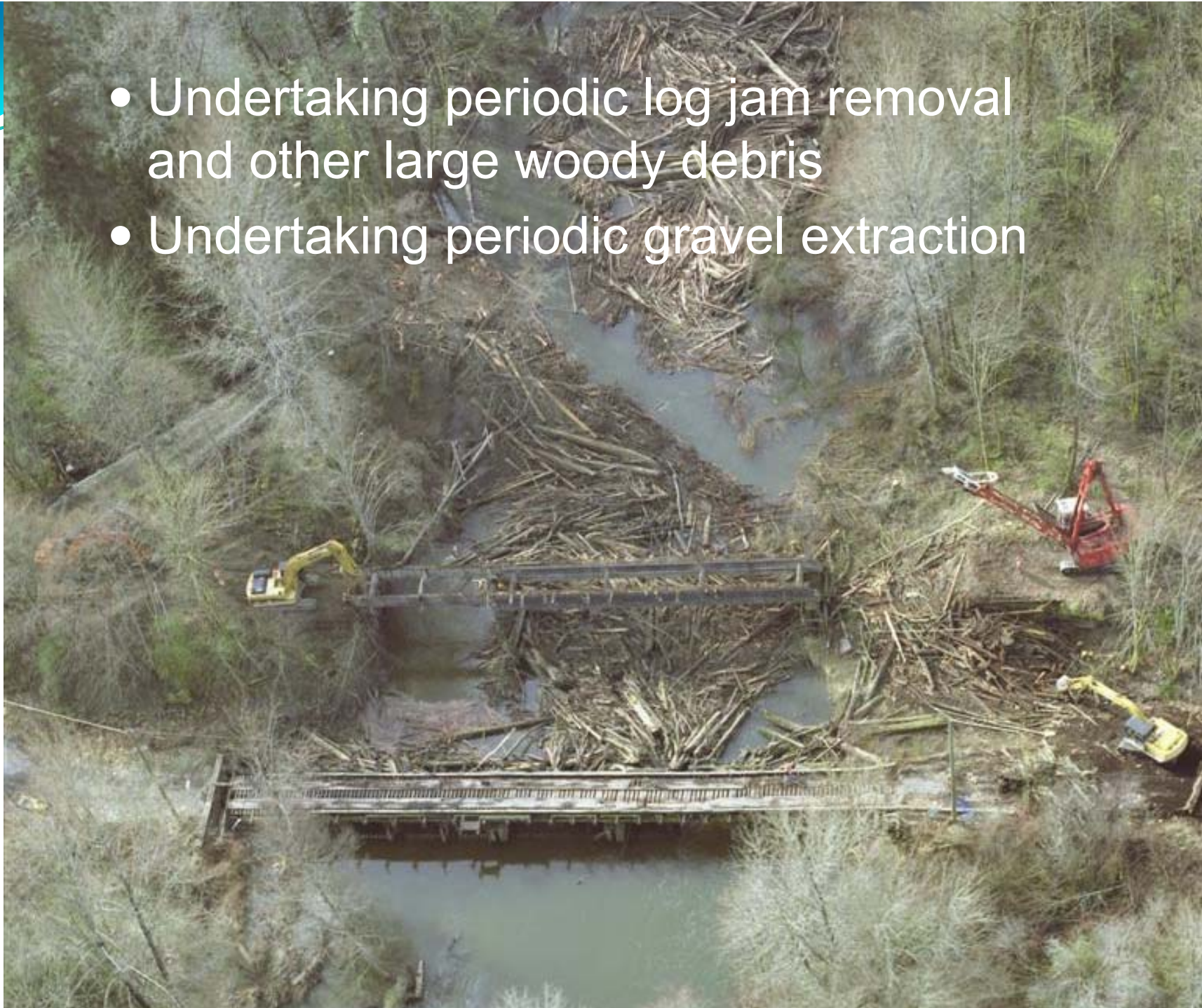


What are the **proposed services** that can help us adapt to flood impacts in the Cowichan watershed?

- Receive federal and provincial funding
- Construct, upgrading, and maintaining dikes and associated structures



- Undertaking periodic log jam removal and other large woody debris
- Undertaking periodic gravel extraction



- Undertaking flood modeling initiatives
- Maintaining a flood monitoring and early warning system



- Developing flood management plans
- Entering into agreements and acquiring interests in land and rights of way
- Acting as the diking authority for dikes and related works
- Implementing the integrated flood management plan in partnership with other local governments



What is the **Drought** problem?

There is plenty of water, but

- most of it falls in the fall and winter
- flows are low in summer, threatening human use and fish

Fall



Summer



Why action is needed

Our watersheds need help



Increasing demand for water resources

Water supports industry, agriculture, recreation,
aquatic life.



Water quality concerns

- Droughts have also meant less water to dilute treated effluent
- Run off from developed areas during rain events is contaminating some of the streams in the Region
- Need for watershed based liquid waste management plans





How are we responding to **drought**
and other climate impacts?

- Establish forum for developing a Cowichan Basin Water Management Plan
- Begin implementing the Plan
- Formation of Shawnigan watershed round table and society
- Rule band adjustment at Cowichan Lake
- Begin design of Bonsall Creek watershed plan
- Data gathering to characterize watersheds
- Propose Cowichan watershed management bylaw services
- New Normal Communication Program

2005

2010

2013

2014

2015

*Regional
Water
Strategy*





What are the **Proposed services** that can help us adapt to climate impacts including increased threat of drought and water quality issues. . .

- Building, upgrading, inspecting, operating and/or owning a weir on Cowichan Lake
- Obtaining and holding water licenses
- Entering into funding agreements and accepting grants



- Promoting and undertaking water conservation initiatives
- Developing, operating and maintaining a hydrological monitoring network including monitoring snow pack, surface and ground water
- Develop and implement drought management plans



- Develop and implement water management plans
- Develop and implement of liquid waste management plans
- Monitor and evaluate water quality
- Construction of capital works and natural system improvements





What does adaptation look like