

Education and Training for Climate Change and Community Adaptation



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UNBC and Climate Change

- 10-15 professors
 - Teaching or direct Research
 - International Studies, Political Science, Natural Resources, Environmental Studies, Environmental Planning, Environmental Science, Environmental Engineering
- 2-4 professors dealing with Climate Change and Communities

UNBC and Climate Change Research

- Stephen Dery
 - Hydrometer, River Discharge and Climate Change
- Peter Jackson
 - Climate Change Modelling
- Jueyi Sui
 - Hydrology and Ice Jams
- Heather Myers
 - Artic and Sustainable Communities
- Heather Smith
 - Climate Change Policy
- Roger Wheate and Brian Menounos
 - Glacier Movement
- Scott Green
 - Climate Change and Forest Ecology
- Art Fredeen
 - GHG fluxes and Forests
- Keith Egger
 - Genetic Impacts and Organism
- Staffan Lindgren, Dezene Huber, Kathy Lewis
 - Forest and Disease
- Traci Summerville and Greg Halseth
 - Resource Dependent Communities

AND OTHERS

Integrated Resource Management

- 2 year course
- Student backgrounds
 - Forestry, Resource Recreation and Tourism, Wildlife Management, Environmental Planning

Integrated Resource Management

□ Course Content

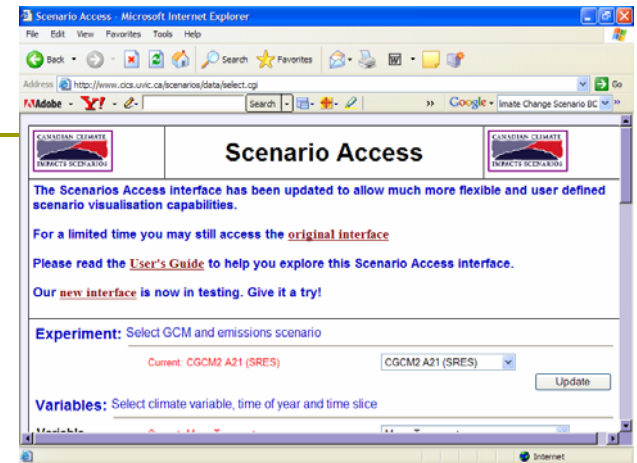
- Management Theme
 - Adaptive Management
 - Ecosystem Health
 - Sustainable Livelihoods....
- Emerging Issues
 - Environmental Justice
 - Climate Change....

Climate Change-DPSIR framework

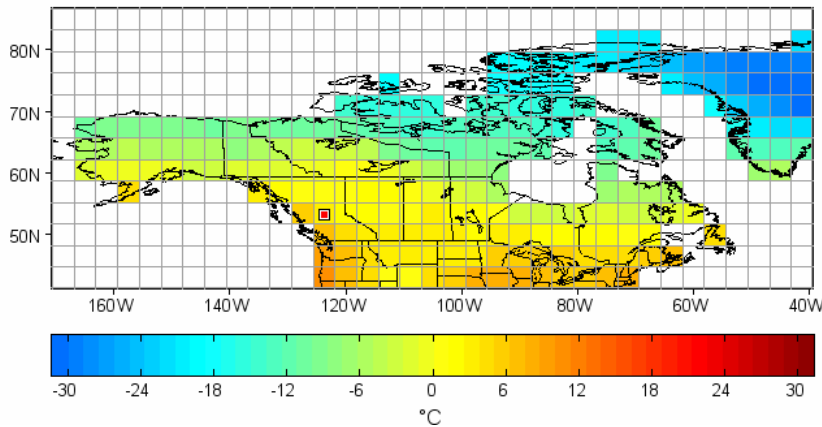
- Drivers (fossil fuel uses, forestry, others)
- Pressure (GHG concentrations)
- State (rainfall, temperature, etc)
- Impact (flooding, pine beetle, etc)
- Response (build dikes, clear cut and salvage, etc)

Climate Change- Risk Assessment Framework

- State (rainfall, temperature, etc)

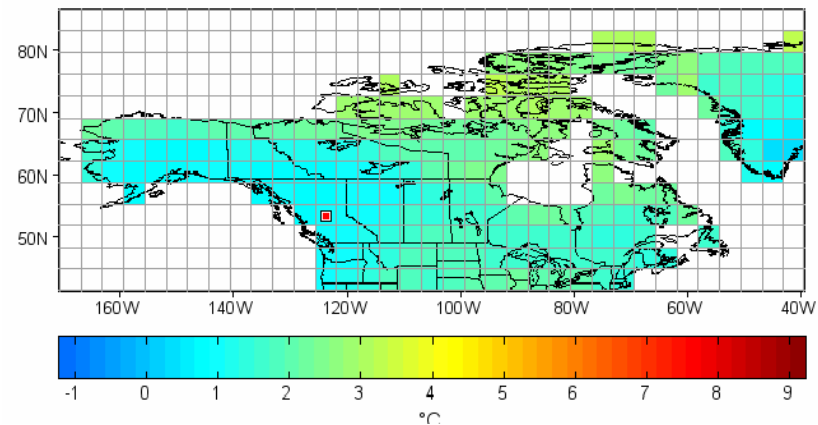


CGCM2 A21 (SRES) - Annual - Mean Temperature - 1961-1990 Baseline



Annual Temp
 Min -32 C to Max 10
 Winter (DJF) Summer (JJA)
 -50 to 5 -12 to 23

CGCM2 A21 (SRES) - Annual - Mean Temperature Change - 2020s



Annual Temp
 Min 0.5 C Max 3,3
 Winter (DJF) Summer (JJA)
 -1.0 to 4.5 0.8 to 3.2

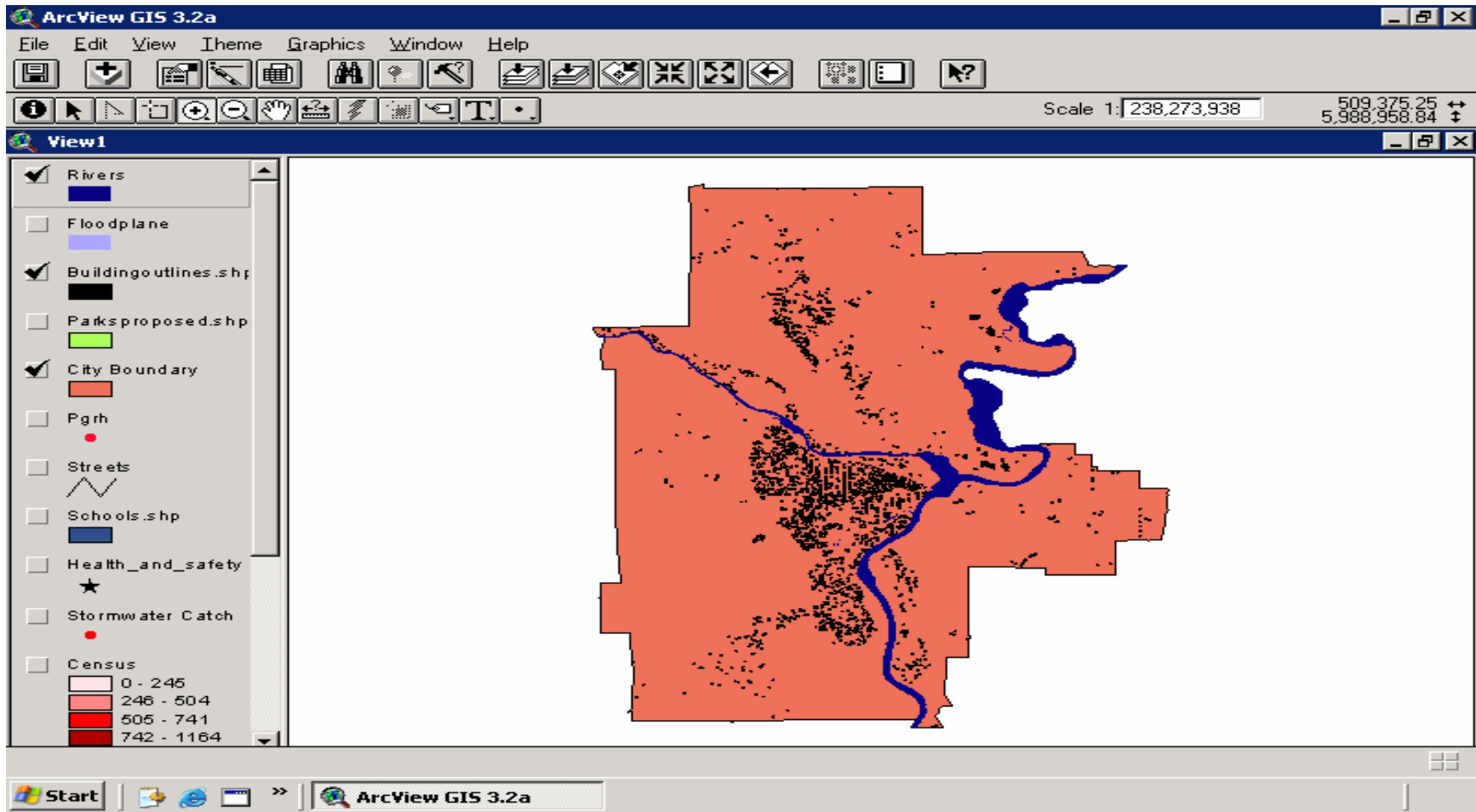
Climate Change- Risk Assessment Framework

- State (rainfall, temperature, etc)

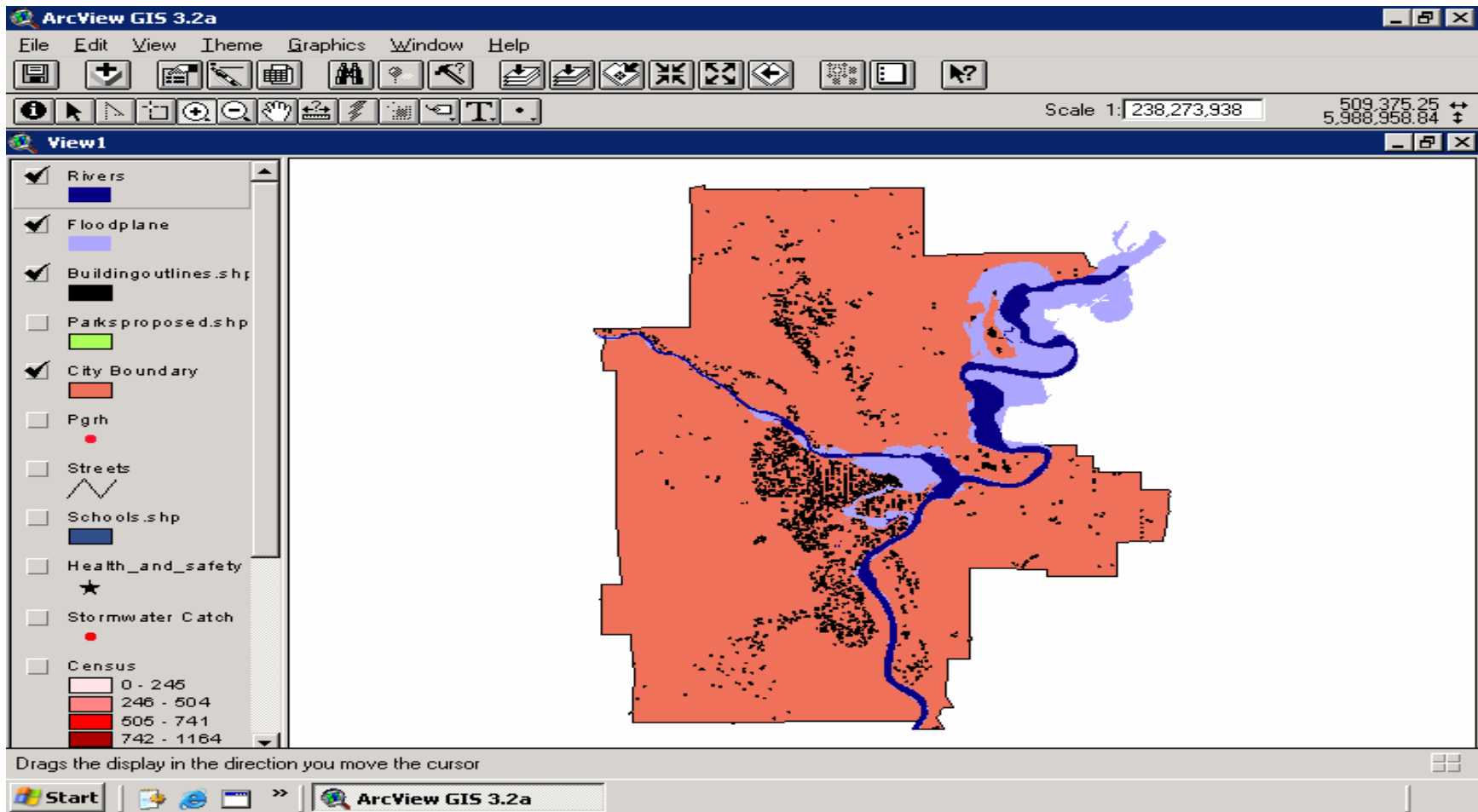
1961-1990 Baseline
Annual Precipitation
Min 1mm/day to Max 7mm/day
Winter (DJF) Summer (JJA)
1 to 9mm/day 1 to 7mm/day

2020
Annual Precipitation
Min -6% Max 11%
Winter (DJF) Summer (JJA)
-14 to 21% -27 to 25%

Risk Assessment



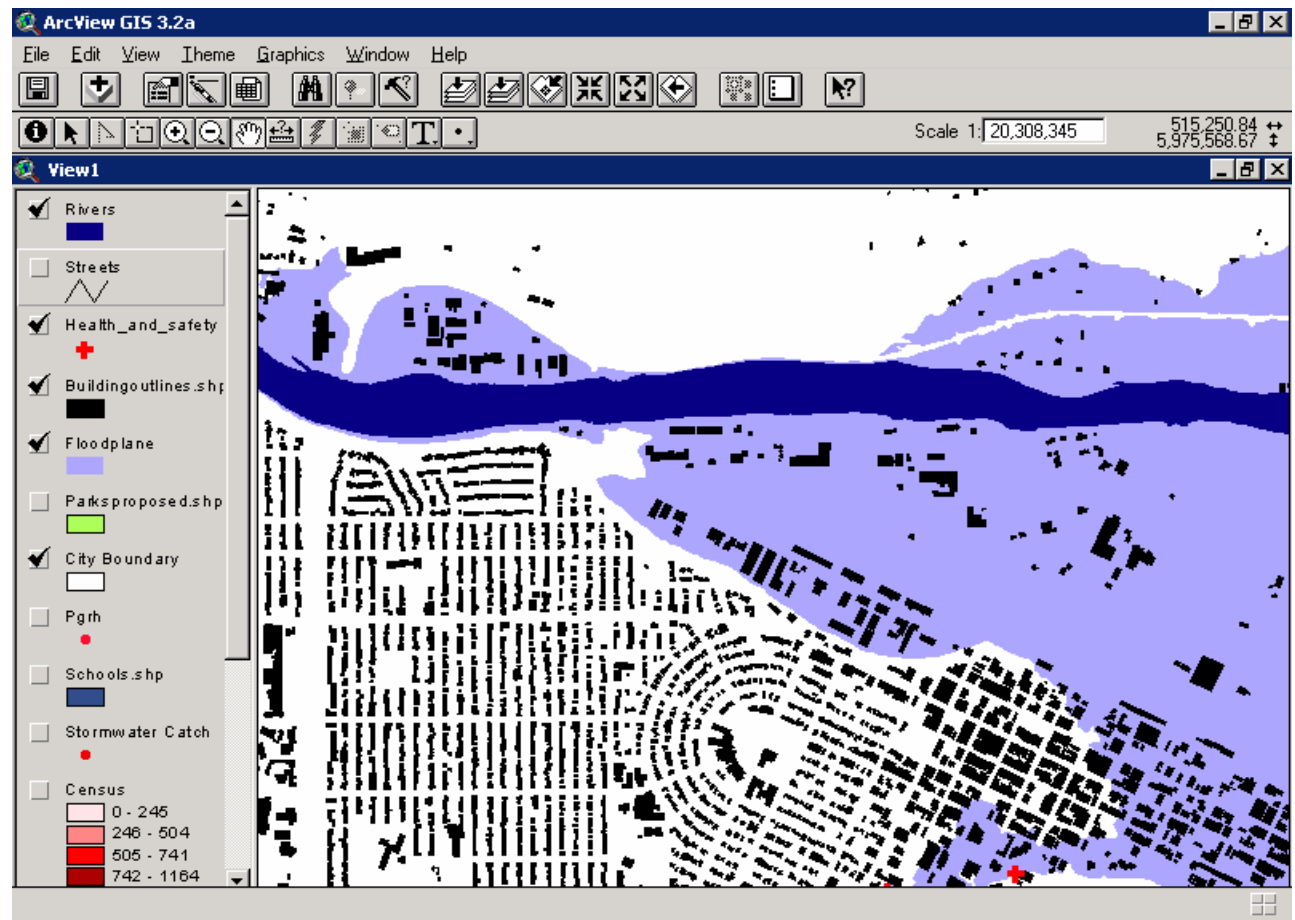
Risk Assessment - flooding



Will this occur and how often?

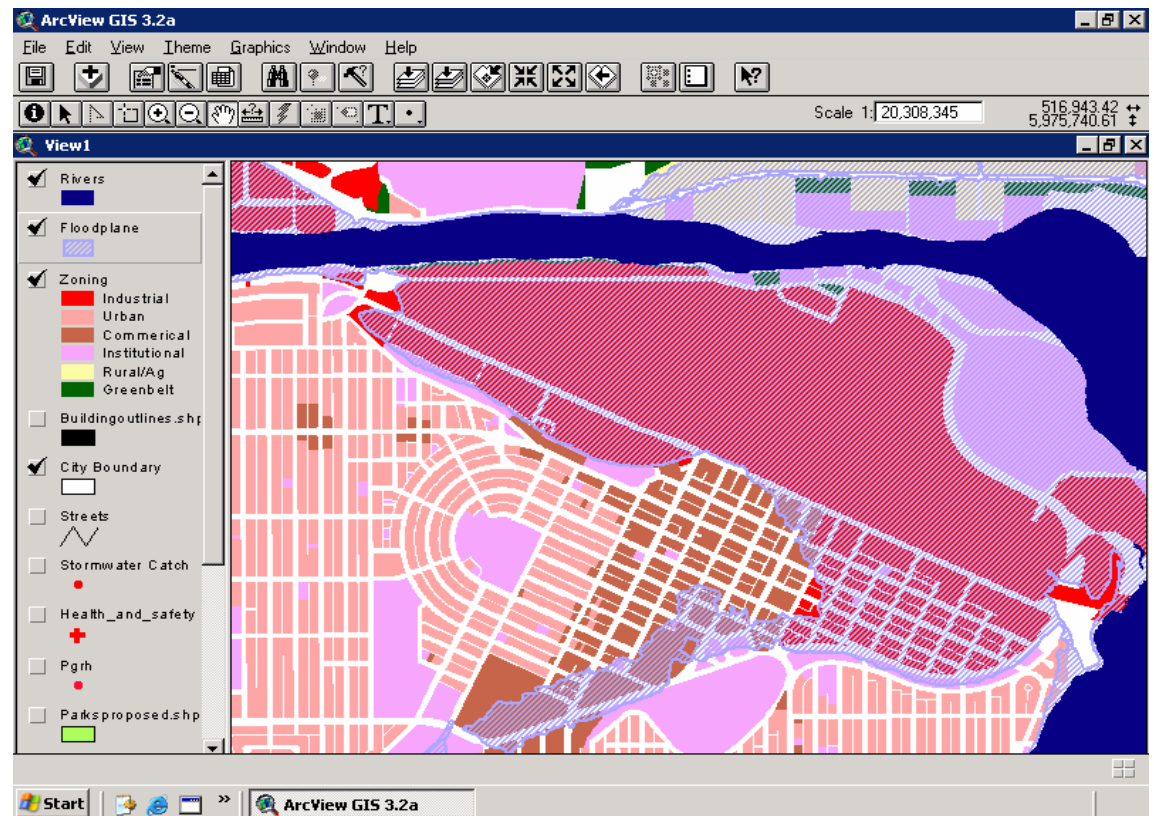
Vulnerability Assessment

- What parts of the Community will be affected?
 - How many properties?
 - What is the tax value?



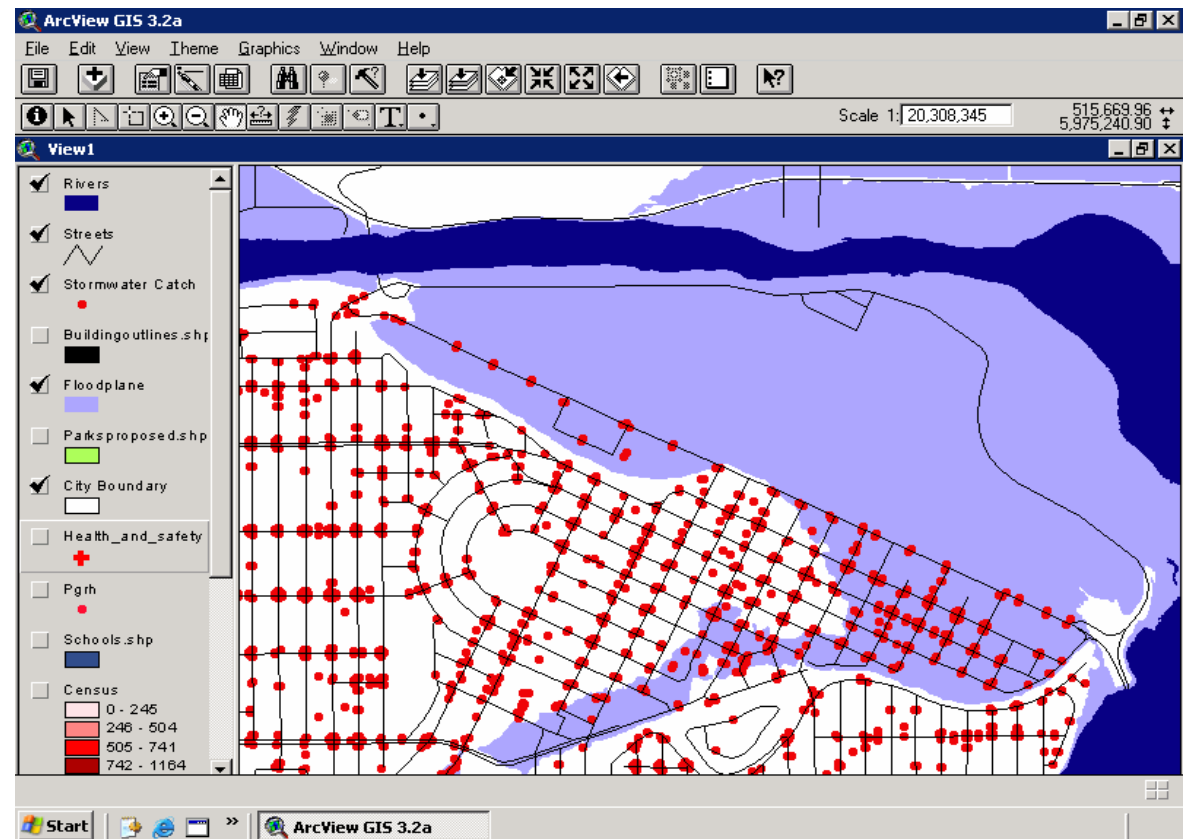
Vulnerability Assessment

- What parts of the Community will be affected?
 - Type of properties



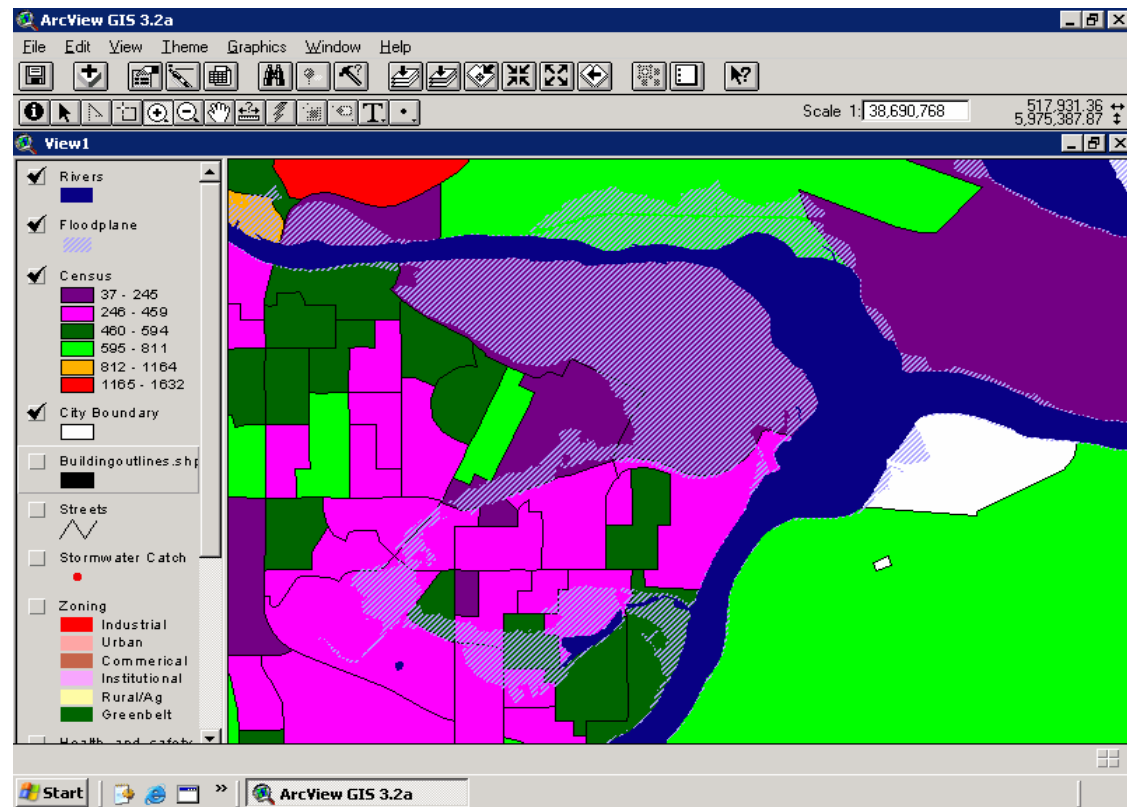
Vulnerability Assessment

- What parts of the Community will be affected?
 - How Many steets and storm water catchments?



Vulnerability Assessment

- What parts of the Community will be affected?
 - How many people?



Adapt Measures And Sustainability Appraisal

Adaptation Measure	Economic	Social	Environment
Business as Usual			
Prevent Losses			
Spread or Share Losses			
Change Activities			
Change Location			
Enhance Adaptive Capacity			

Training and Education-Climate Change

- Climate Change
 - World Wide Issues
 - Canada Wide Impacts
 - Air, Water and Land will be Effected
 - Anything dealing with Air, Water and Land will need to address climate
 - So, then who needs training

Simple

EVERYONE

The Educating Starts?

- What is Global Warming and Climate Change
 - School kids today?
- Vulnerability and Impacts
 - School kids today?
- Making Adaptation Strategies
 - Adults today?

What type of course should we be taking?

- U VIC
 - Risk Management Environmental and Occupational Health
- UBC
 - Climate Change in the 21st Century
 - Integrated Assessment
- UNBC
 - Canadian Risk Management Certification
 - Climate Change and Community
 - Global Change
 - Integrated Resource Management

Should Universities develop courses?

- Is there a demand and has there been a demands assessment conducted?
- What should be the content?
 - Undergrad-grad courses
 - Professional-Continuing education courses
- Can universities deliver the needed skills sets?

Network for Education?

- Should universities be working together to develop education around climate change?
 - BC Education Network for Climate Change Education and Training
 - Could SFU, UBC, UVIC, UNBC create an combined education program?
 - Climate Scenarios and Impacts, Vulnerability Assessment (Fisheries, Forestry, Infrastructure, Health), Adaptation Strategies, Policy, Planning Process and Governance
 - Who would or should support such an network