



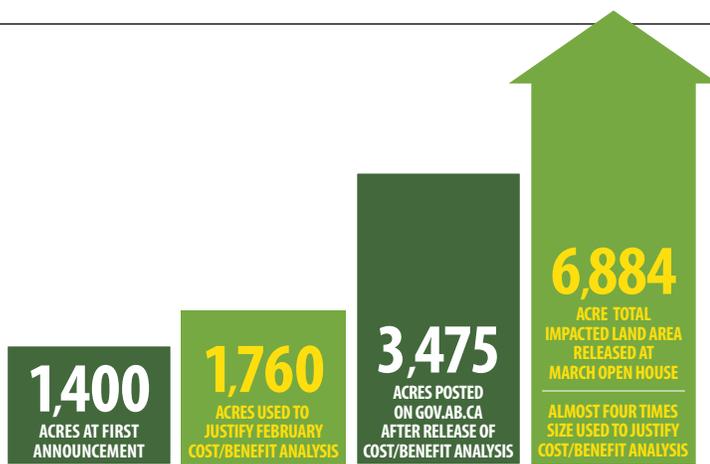
Springbank Dam Cost/Benefit Analysis Summary of Independent Critique:

In response to the 100-year flooding of the Bow and Elbow Rivers in 2013, the Government of Alberta (GoA) announced three potential mitigation projects on the Elbow River: an on-stream reservoir at McLean Creek (MC1), a dry dam in Springbank (SR1), and a diversion tunnel under Calgary as mitigation options for possible future flooding.

The PC Government's basis for moving forward with only Springbank over McLean Creek was based on a Cost/Benefit

Analysis (IBI Report) using preliminary engineering and land requirements of about 1,760 acres at \$40,000,000 in value. Prior to the recent change in government, land requirements were announced to have increased to somewhere between 3909 and 6884 acres, at a cost of at least \$89 to \$158 million. This increase was not reflected in the cost/benefit analysis used as justification for moving ahead with the Springbank "dry dam."

In light of concerns over the validity of Springbank over and McLean Creek, an independent consultant was engaged to provide the following critique of the Government of Alberta's February 2015 Cost/Benefit Analysis available at <http://www.alberta.ca/flood-mitigation-studies.cfm>



The Government of Alberta used a land requirement of 1,760 acres to calculate the cost/benefit in favour of a dam in Springbank over one in McLean Creek. Increased land requirements were later released at almost four times the size, making any cost/benefit justification invalid.

Changes between June 2014 AMEC report and Feb 2015 IBI Report

- June 2014 AMEC Benefit Cost Analysis: benefits calculated for both projects 174M
- Feb 2015 IBI Report: benefits at 337M to 477M, two to three times higher than AMEC
- IBI report cannot be relied on unless there is a credible explanation for this discrepancy, currently there is not
- Feb 2015 IBI Report: costs of 45M in infrastructure relocation added to MC1
- Changes in projected capital costs of MC1 and SR1 resulted in MC1 being more costly
- 2014 AMEC report had MC1 at 80M higher than SR1 in terms of construction costs

IBI did not take into account Interaction between mitigation measure

- 2013 Aud General report stated ESRD did not have adequate processes to assess cumulative effects of flood mitigation programs, meaning that some communities will be overprotected and some under protected
- IBI did not take into account non-structural or local structural measures that could be put in place – the IBI report assumes no other measures will be in place – this means that the benefits of the large projects are necessarily overstated

IBI overstated indirect damages – therefore overstated benefits

- Indirect damages of floods are the economic value that would have been created but was not as a result of the flood
- Hard to assess or calculate -- usually a fixed percentage of direct damages
- IBI used a figure of over 300% as the multiplier
- In Canada and USA standard multipliers are 15 – 20%
- Report is misleading, states damages on basis of 'worst case scenario' rather on the basis of 'anticipated' or 'expected' scenario – this creates a false impression of increased benefits and skews the ratio.
- If the 'anticipated' scenario is used SR1 has a benefit cost ratio of 1:01, making it economically questionable with present value of net benefits of 4.1M

IBI report mistakenly regards benefits of MC1 and SR1 as the same

- SR1 does not protect Bragg Creek and Redwood Meadows, whereas MC1 does – this is not accounted for in IBI report
- Possibility of recreational facility being created by MC1 – not accounted for in report

Replication of McLean Creek infrastructure

- No assessment of whether replication of McLean Creek infrastructure is feasible
- ESRD could not tell consultants "to what extent these facilities are currently being used, if at all."
- Without knowing that, there is no reasonable basis for replicating them
- This serves to overstate costs of MC1 relative to SR1

Costs of Springbank dam (SR1) understated

- Uses 1760 acres – project will need at least 3909ac (122% increase) and possibly 6884 ac (291% increase)
- IBI used estimated land cost of \$23K per acre – takes land costs from 40M to 156M. This changes ratio when the 'anticipated' scenario is used – project not worth doing
- \$23K per ac is on the very low side – land is developable – a major development, Gardner Developments is just east of these lands

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