Using Sound Science to Reach a Common Sense Solution

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PRESENTATION OVERVIEW

1. Background to the City of Kamloops
2. Legislation in British Columbia
3. The environmental impact assessment process
4. Outcomes

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LEGISTATION

- City currently operates under permit issued by Government of British Columbia
  - Organic matter
  - Disinfection
  - Seasonal phosphorus restrictions
- Permit process replaced with the British Columbia Municipal Sewage Regulation
- Alternative is a Liquid Waste Management Plan

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WHAT IS THE MUNICIPAL SEWAGE REGULATION?

- Non-site specific
- Requires a high level of phosphorus treatment for discharge to the Thompson River at Kamloops (< 0.25 mg/L total phosphorus)
- Concentration set because of best technology – ***NOT*** based on science and environmental needs
- Interaction between discharger and BC government agency only

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WHAT IS A LIQUID WASTE MANAGEMENT PLAN?

- Long-term plan for the management of liquid wastes
- Site specific – appropriate to the local situation and environment
- Environmental impact assessment
- Multi-stake holder participation

This process selected due to complexity of Kamloops' situation

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MULTI-STAKE HOLDER PARTICIPATION

- **Steering Committee** – City council and senior staff
- **Public Advisory Committee** – general public, local businesses, interest groups
- **Technical Advisory Committee** – Federal and Provincial Governments, key technical expertise
- Federal Government – Environment Canada, Fisheries and Oceans Canada
- Provincial Government – BC Environment, Agriculture, Funding Services
- Public open houses

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PROCESS OPTIONS

- **Option 1:**

  Full biological nutrient removal – very low effluent phosphorus. $70,000,000.

- **Option 2:**

  Modified biological nutrient removal – low effluent phosphorus. Upgradeable process, as required by the receiving environment. $25,500,000.

SCOPE OF THE ENVIRONMENTAL IMPACT ASSESSMENT

1. Literature Review
2. Panel of Experts Workshop
3. Phased Risk Assessment

LITERATURE REVIEW

- Problems in early 1970's: foaming, discolouration, fish tainting, excessive algal growth
- Sources of problems?
- Phosphorus issue is complicated, but 1.5 mg/L total phosphorus limit may be appropriate for City of Kamloops

PHASED RISK ASSESSMENT

Phase 1: Phosphorus Mass Balance

Phase 2: Biological Response

1. **Identify portion of phosphorus and current algal growth attributable to City**
2. **Predict changes with City's different effluent criteria**
3. **Conclude impact of City's changes**

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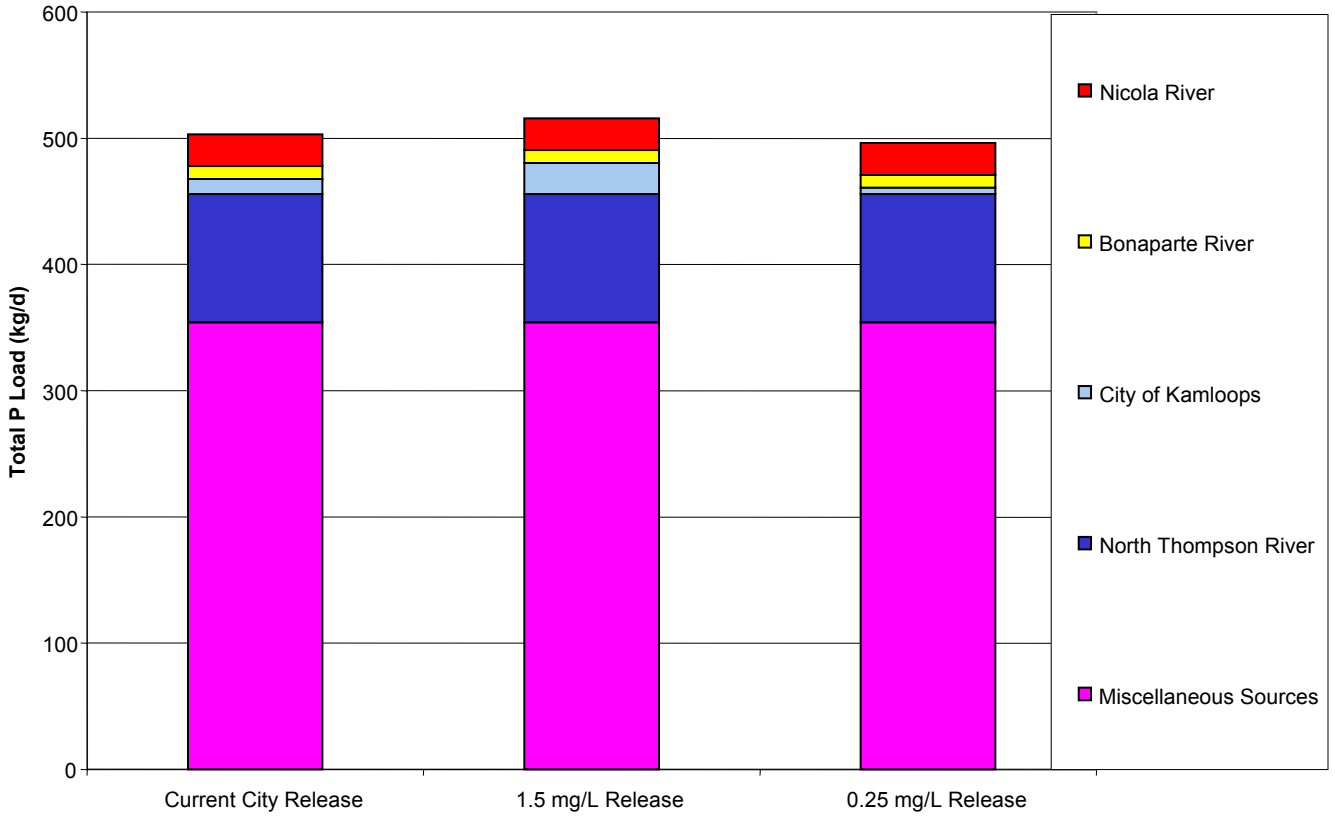
PHOSPHORUS MASS BALANCE



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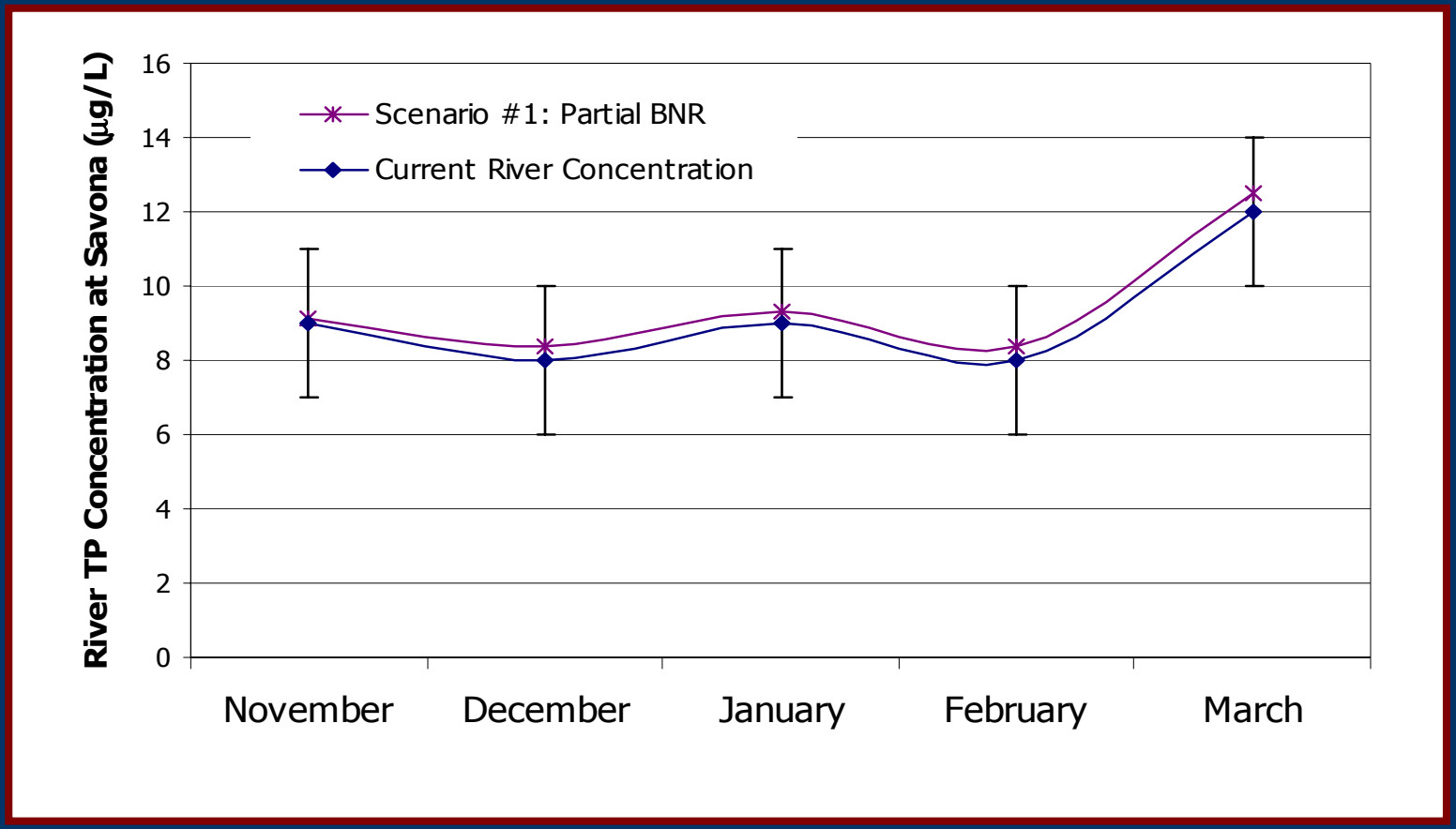
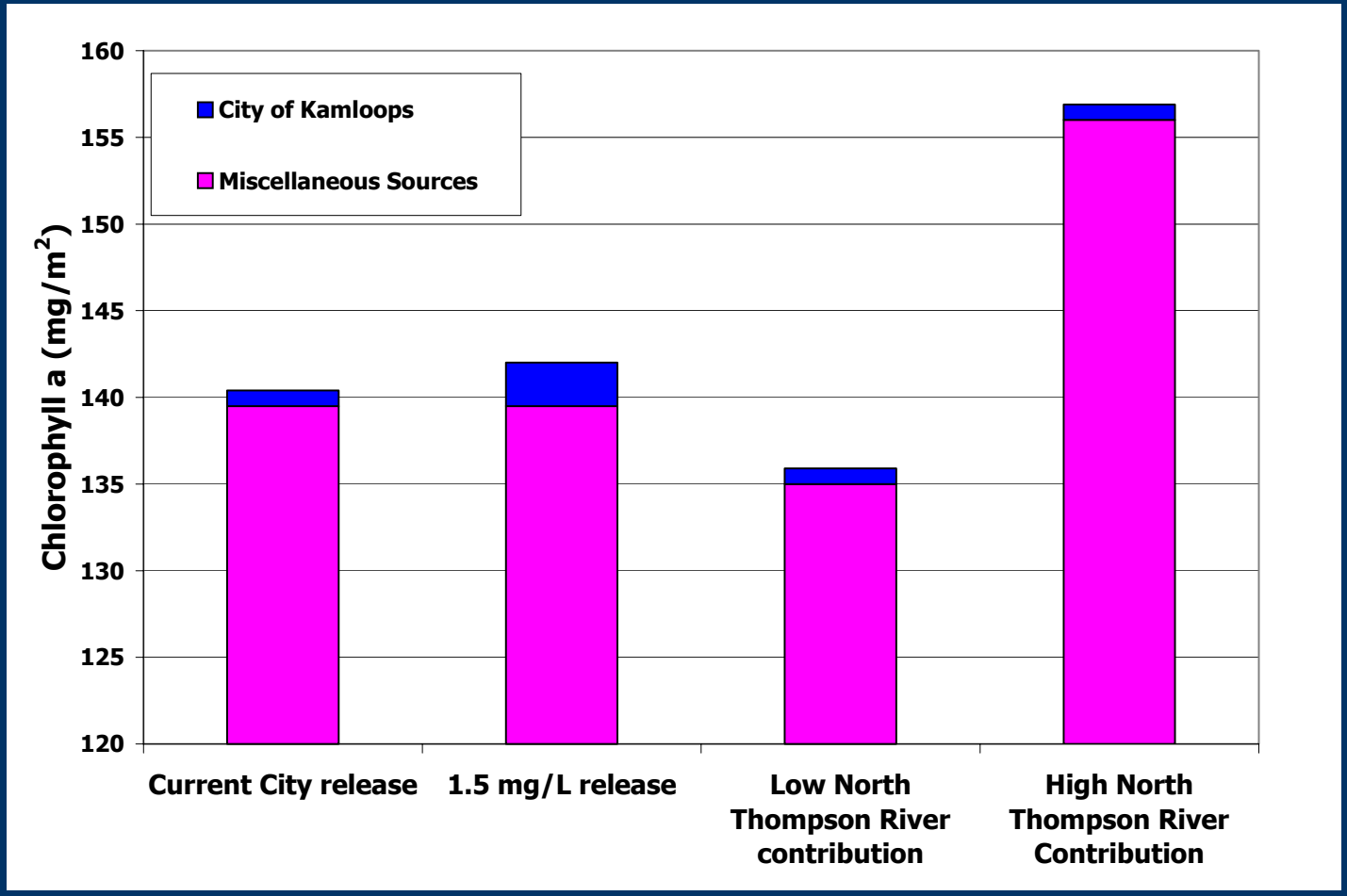


ALGAL BIOMASS CONTRIBUTIONS



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OUTCOME FOR PHOSPHORUS CRITERIA

- Scientifically - partial biological nutrient treatment process is appropriate and environmentally responsible.
- No scientific indication that the full biological nutrient removal option would be of significant benefit to the receiving environment.
- Cost saving of over $40,000,000 justified by science.

CONCLUSIONS

- Science has been used to develop direction which is not only sensible but also has a direct cost benefit.

QUESTIONS?