



# Gateway Program



## South Fraser Perimeter Road

EAO Working Group Update: March 28 2008



## Overview

- EC/TC/MOT - November 2007 – March 2008.
- Potential effects to Burns Bog.
  - Deposition of road dust.
  - Hydrological effects.
  - Species at risk.
- MOT/ALC – January – March 2008.
- SAP – March, 2007.



## MoT/TC/EC Meetings

- Focused technical discussions (wildlife, hydrology, air quality)
- Objectives:
  - Obtain information to assess likelihood and magnitude of potential risks to Burns Bog
  - Develop additional agreed upon assessment methodologies where necessary; and
  - Identify additional/detailed mitigation to manage environmental risk.

## Particulate deposition

- Background
  - Risk of high volumes of road dust being deposited from SFPR.
  - Risk of road dust changing hydrochemistry of bog.
  - Impacts to Sphagnum as a result of changes to hydrochemistry.
  - Change in species make up to terrestrial plant communities.



## Particulate deposition

Work undertaken:

- Modelling of Particulate Matter Deposition in Burns Bog from SFPR emissions.
- The impact of total airborne particulate loading on Burn's Bog hydrochemistry.
- Character and impact of road dust-derived Calcium in reference to Burns Bog.

## Particulate deposition

- Interim conclusions
- Low risk of effects to Burns Bog from road related dust.
  - Predicted rates of deposition generally low and diminish rapidly within 100 m of road edge.
  - Bog has buffering capacity and hydrochemistry will not be adversely effected by predicted PM.
  - Calcium not abundantly present in a form that would cause adverse effects to Sphagnum.
  - “Threshold” of Sphagnum to calcium higher than concentrations that would occur as result of SFPR.



# Hydrology

- Background:
  - Impacts to lagg along western edge.
  - More information to assess potential effects along northern perimeter.
  - More information on to support design, construction and operation of hydrological mitigation.

## Hydrology

- Work undertaken:
  - Concerns around western edge addressed through alignment refinement.
  - Provided more detailed information on stratigraphy and hydrogeology adjacent to Bog.
  - Information/feedback on hydrology mitigation from March 27 SAP workshop.



## Wildlife

- MoT receiving direction from MOE on the management of species at risk.
- Detailed mitigation monitoring plans developed for at risk vegetation and wildlife in the corridor.
- MoT receiving direction from CWS on the management of migratory birds including Sandhill Crane.



## Wildlife

- Increase impacts to Sandhill Crane from alignment refinement.
- Vegetated buffer between SFPR and fields to address visual/disturbance effects.
- Additional mitigation monitoring:
  - Satellite telemetry prior to construction (fall 2008).
  - Comprehensive spring and fall surveys.
  - Consider other lower mainland populations.
  - Habitat assessment.



## Cumulative Effects

- Revise CEA based on:
  - Impact of refined alignment on hydrology and wildlife.
  - Particulate deposition modeling.
- Cumulative effects anticipated to be reduced.



## **SAP meeting**

- Project update
- Feedback on design and construction for hydrology mitigation (Lagg pond ecosystem complex).
- Update on hydrogeology monitoring
- Opportunities for SAP involvement in future development of SFPR and mitigation works.

## SAP meeting

- Support for alignment refinement to address impacts on western perimeter.
- Support for advancing lagg pond ecosystem complex or other hydrological mitigation.
- Support for performance objectives proposed by EC to guide development of hydrology mitigation.
- Develop detailed workplan for advancing hydrological mitigation including:
  - Confirming where mitigation required;
  - Information and tools required to support design and construction;
  - Schedule/milestones for process of developing mitigation works.
- Workplan to be discussed with TC/EAO/CEAA prior to follow up with SAP.



## Next Steps

- Hydrology/Burns Bog
  - Confirm a refined alignment to reduce potential effects.
  - Workplan for advancing hydrological mitigation for discussion with TC/EAO/CEAA.
- Particulate deposition – April 8 meeting to discuss results of modeling.
- Wildlife – Submission of mitigation monitoring plan for Sandhill Crane.
- Cumulative effects – Revised CEA.



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