



Northwest, Southeast and Northeast Transmission Development

Jeff Billinton, manager, Regional Planning

AESO Stakeholder Conference

June 21, 2005

Overview

- Transmission Development
 - Stakeholder Consultation Process
 - Northwest Transmission Development
 - Southeast Transmission Development
 - Northeast Transmission Development



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Northwest Alberta Transmission Development

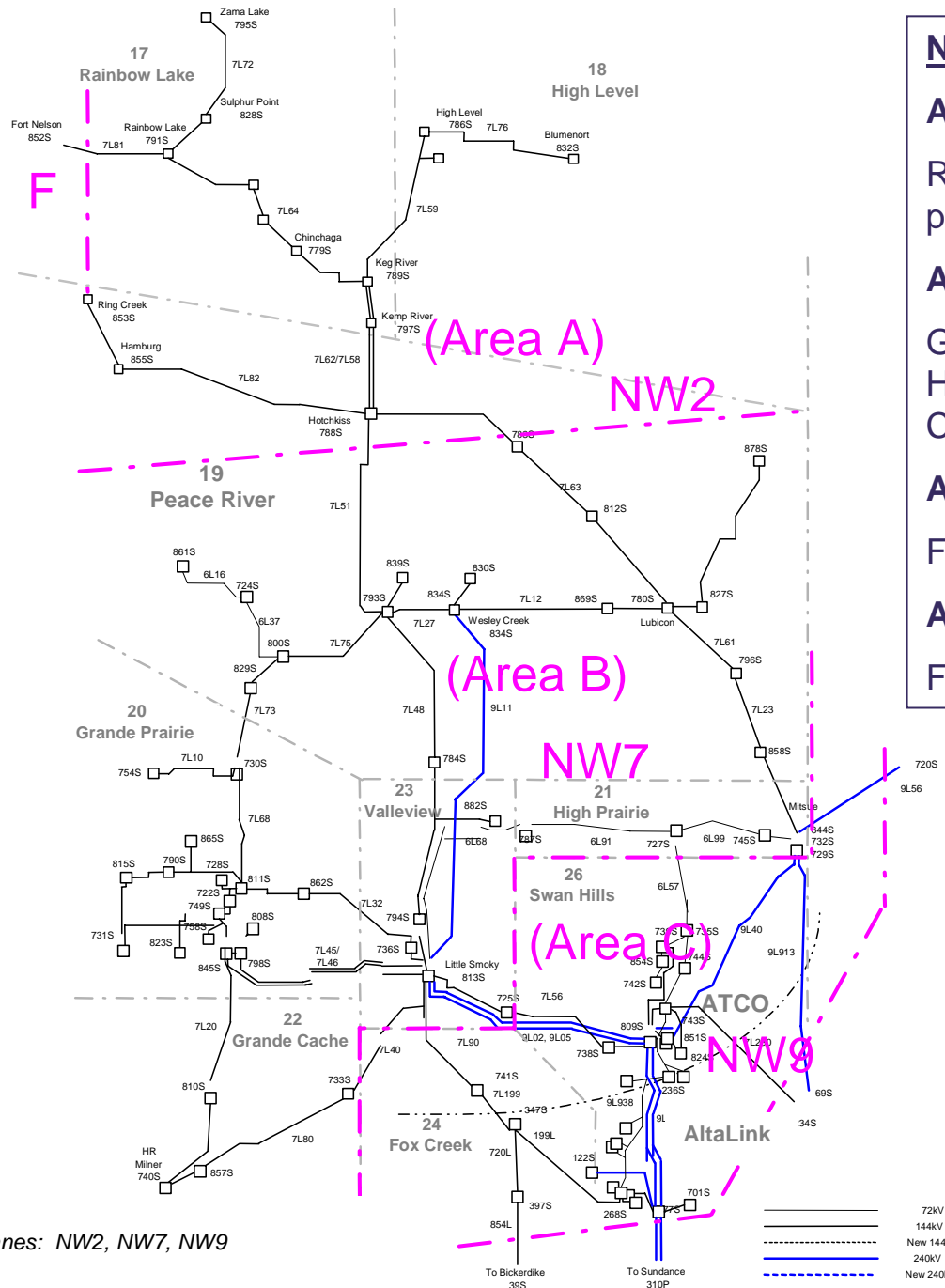
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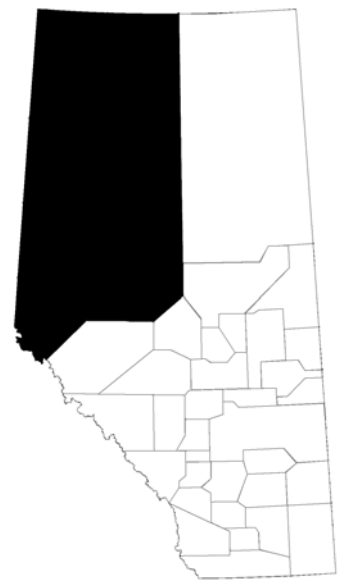


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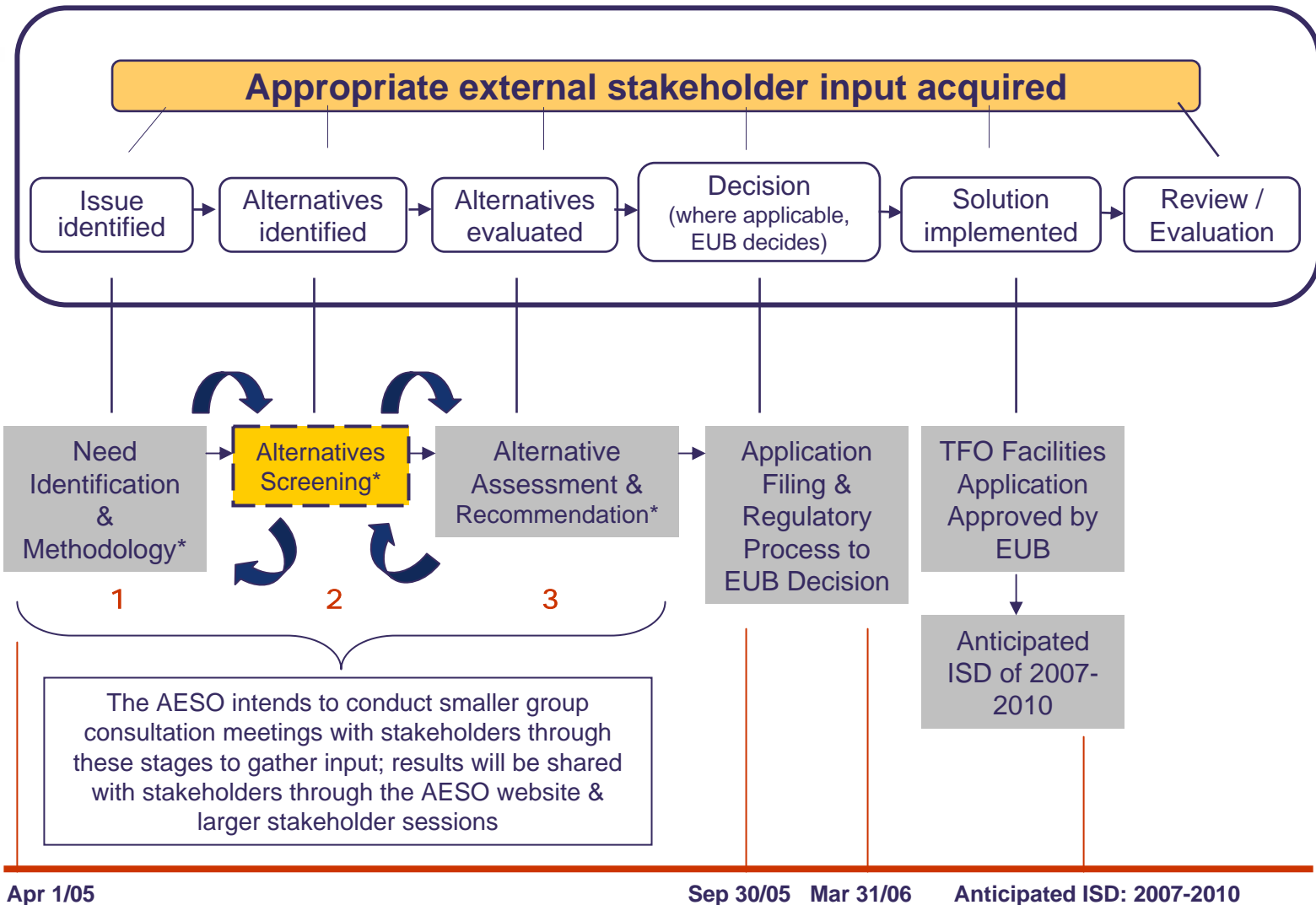


Cut-Planes: NW2, NW7, NW9

- ### NW Planning Areas
- Area A:**
Rainbow Lake, High Level, part of Peace River
 - Area B:**
Grande Prairie, Valleyview, High Prairie, Grande Cache, part of Peace River
 - Area C:**
Fox Creek, Swan Hills
 - Area F:**
Fort Nelson



NW Alberta Consultation



Stakeholder Meetings to date

- Alberta Energy and Utilities Board
- AltaLink Management
- ATCO Electric
- ATCO Power
- BC Hydro / PowerEx
- BC Transmission Corporation
- Canadian Hydro Developers Inc.
- Diashowa
- FIRM Customers group
- FortisAlberta
- Husky Energy
- Industrial Power Consumer Association of Alberta
- Alberta Direct Connects
- Milner Power Inc.
- Shell Canada Limited
- TransCanada



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Preliminary NW Need Findings

Area A:

- At present, load carrying capability of the transmission system is insufficient in the area due to voltage instability under Category A conditions

Area B:

- During the 2006/07 winter period it is forecast that voltage stability issues will be present under Category B conditions

Area C:

- During the 2011/12 winter period it is forecast that voltage stability issues will be present under Category B conditions
- During summer 2012 it is forecast that thermal overload will become an issue under Category B conditions



Range of Options

Technical Options

- Transmission Upgrade
- New Transmission
- Local Generation
- Reactive Power
- Series Capacitors
- Phase Shifting Transformers

Supply Point Options

- Wabamun / Edmonton
- Fort McMurray
- BC Interconnection
- Local Generation



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Screening Process

- A staged planning process screening from a large range of possible options to a limited and most likely set of prime alternatives to conduct the detailed analysis on
- Initial technical viability is assessed based on the system knowledge and engineering judgment of experienced system planners



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Prime Alternatives (Preliminary)

- Area A: 2 prime alternatives
- Area B & C:
 - Wabamun / Edmonton – 5 prime alternatives
 - Fort McMurray – 7 prime alternatives
 - BC Interconnection – discussions ongoing with BCTC
- Details provided in Alternatives Screening document
- Prime alternatives undergo detailed assessment; Alternatives Assessment document



Alternatives Assessment Process

- The AESO increases the degree of analysis for the potential viable set of alternatives identified
- The increased degree of analysis follows a staged approach that includes:
 - Viability assessment
 - Capability verification
 - Net cost analysis
 - Dynamic and voltage stability analysis
 - Corridor / land use evaluation



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Comparing Alternatives

Assessment Factor / Alternative Ranking	Alternative 1	Alternative 2	Alternative 3
Technical Evaluation			
Load Supply Capacity			
Thermal Loading			
Voltage Stability			
Dynamic Stability			
Operational Reliability			
Financial Evaluation			
Revenue Requirement			
Losses Savings			
TMR Reductions			
PV Net Cost			
Corridor / Land Use Evaluation			
Other Considerations			
Project Flexibility			



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NW Key Milestones

- NW Stakeholder Meetings
 - Need Identification – March to May
 - Screening Options – June
 - Alternative Selection - July & August
- Filing of Need Application(s)
 - By September 30, 2005
- Expected In-Service Date
 - 2007-2010 depending on facilities





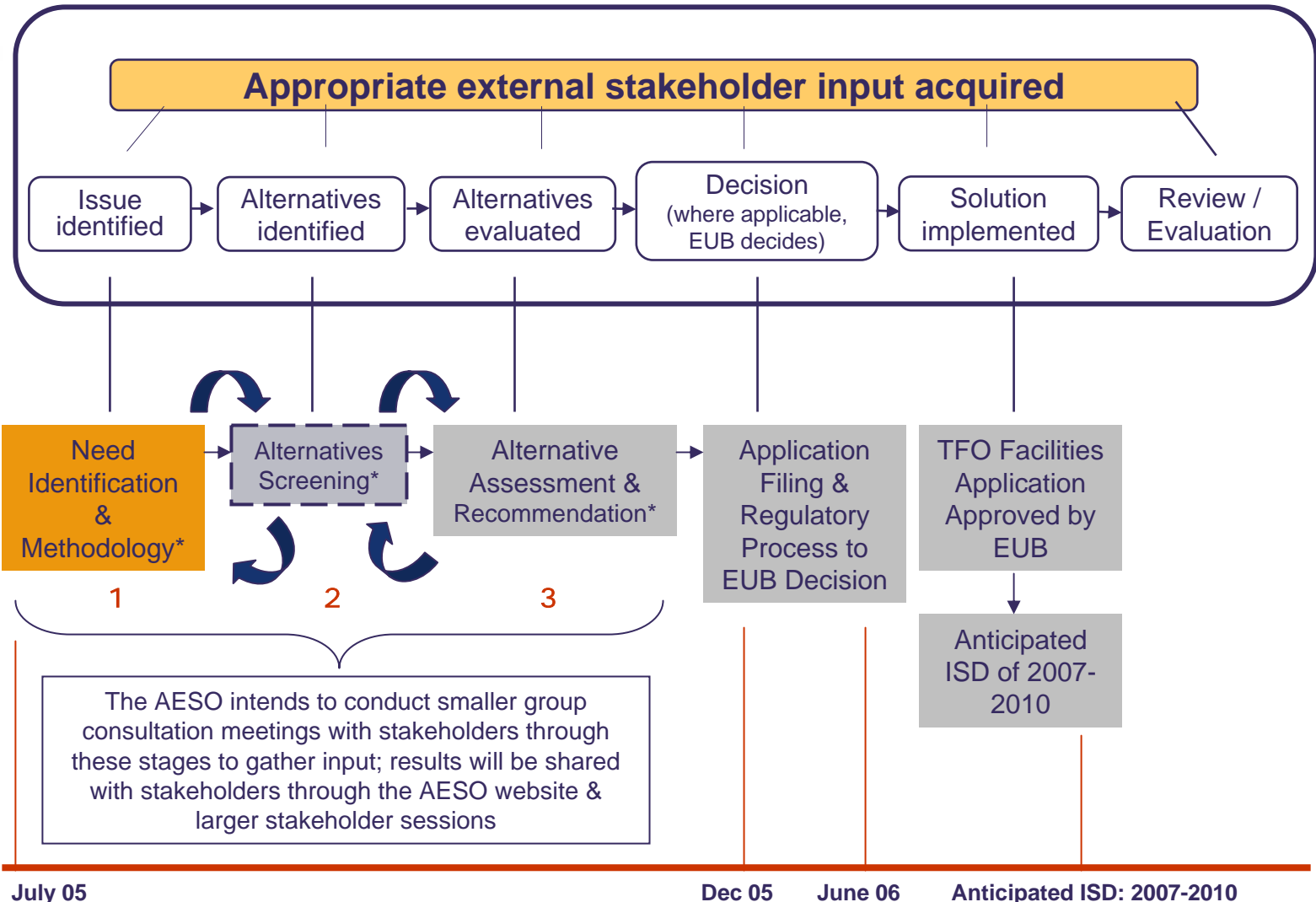
Southeast Alberta Transmission Development

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SE Alberta Consultation



*Arrows denote iterative process

Preliminary SE Need Findings

- Load Supply Adequacy Concerns
- Concerns Resulting from Generation Development
- Constraints on interchanges with Saskatchewan
- Maintenance Outage Scheduling Concerns
- Age and condition of facilities



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SE Key Milestones

- SE Stakeholder Meetings
 - Need Identification – July to August
 - Screening Options – September
 - Alternative Selection - October & November
- Filing of Need Application
 - By December 2005 or within Q1 of 2006
- Expected In-Service Date
 - 2007-2010 depending on facilities





Northeast Alberta Transmission Development

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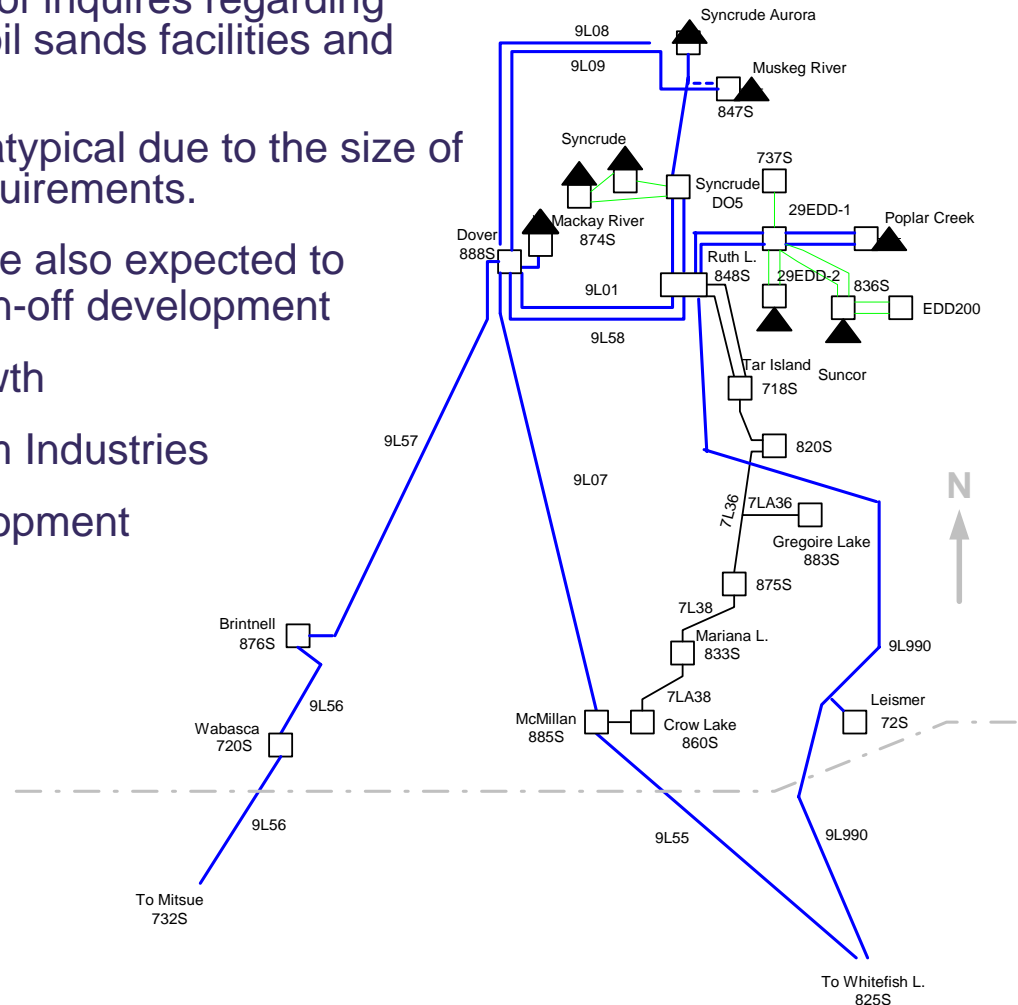
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NE Transmission Development

Key Elements

- Significant number of inquires regarding interconnection of oil sands facilities and load increases
- Requirements are atypical due to the size of load/generation requirements.
- Other area loads are also expected to increase due to spin-off development
 - Municipal Growth
 - Light & Medium Industries
 - Pipeline Development



Current Development (Source: Oil & Gas Network)

- Horizon Oil Sands Project - CNRL
- Fort Hills - UTS Energy
- Kearl Lake - IOL
- Northern Lights - Synenco Energy Inc.
- Long Lake Project - OPTI/Nexen
- Dover Vapex Pilot Project - Consortium
- Surmont - Consortium
- Sunrise Thermal Project – Husky Oil
- Joslyn Project – Deer Creek/Enerplus



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NE Key Milestones

- NE Stakeholder Meetings
 - Need Identification – July to August
 - Screening Options – September
 - Alternative Selection - October & November
- Filing of Need Application
 - Within First Quarter of 2006
- Expected In-Service Date
 - 2007-2010 depending on facilities



For More Information

- Transmission project information available on AESO's website:
 - <http://www.aeso.ca/transmission/5996.html>



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