
Yukon Energy

20-Year Resource Plan: 2006-2025

Summary and Overview
July 25, 2006



Outline of Presentation

PART ONE - Background

- Resource Plan Review Process
- Resource Planning Framework
- Yukon Energy's Systems
- New Capacity Planning Criteria

PART TWO – Overview of the Plan

- Near Term Requirements
- Longer Term Industrial Development Opportunities

Resource Plan Review Process – Yukon Energy Filings

- Yukon Energy's 20-year Resource Plan Submission filed June 1 with the Yukon Utilities Board (YUB)
- Addresses major electrical generation and transmission needs in Yukon from 2006 to 2025:
 - January 2006 Resource Plan
 - Background on the Yukon's power systems (Chapter 2)
 - System capability and capacity planning criteria (Chapter 3)
 - Near-Term Requirements (Chapter 4),
 - Industrial Development Scenarios & Opportunities (Chapter 5)
 - May 2006 Supplemental Materials
 - Whitehorse Diesel Plant, Carmacks-Stewart Transmission Project, and Other Topics
 - June 1 Overview of Yukon Energy's Resource Plan Submission
- Resource Plan was last reviewed by YUB in 1992

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Resource Plan Review Process (2) – Minister's Letter

- Minister on June 5 requested that the YUB carry out a review & hold a hearing on the Plan with emphasis on:
 - Near Term projects that will require Yukon Energy commitments before 2009 for costs of \$3 million or more
 - Planning activities which Yukon Energy may be required to carry out in order to start construction on other projects before 2016 related to potential major load developments in Yukon.
- The letter also sets out specific matters the YUB should take into consideration in its review.
- The YUB is to forward its report to the Commissioner in Executive Council, and make it public, by October 31, 2006.

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Resource Plan Review Process (3) – Public Consultation

In addition to YUB process:

- Resource Plan and Overview document made available to the public.
 - At YEC's website and its main and district offices
 - Also libraries throughout Yukon.
- Public meetings held in most Yukon communities.
 - YEC to produce summary of comments from sessions
- Provided media release and briefing on the Plan.
- For specific projects (to date mainly Carmacks-Stewart Transmission Line), made available separate materials via website, newsletter, public meetings.

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Resource Planning Framework - Capacity and Energy Planning

- **Capacity Planning** – focuses on meeting highest or peak megawatt (MW) capability required on each system
 - YEC responsible for power supply on Whitehorse-Aishihik-Faro (WAF) grid system and Mayo-Dawson (MD) grid system
 - Includes need for "reserves" or extra capacity over and above peak loads to address unplanned outages
- **Energy Planning** – focuses on meeting kilowatt hours (kW.h) of electricity required over the year or season on each system
 - In Yukon, no concern over ability to produce enough energy, even during droughts
 - Main issue is cost – if systems require substantial diesel generation, then opportunities arise to build new low cost hydro or other baseload generation to displace high cost diesel generation

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Resource Planning Framework (2) –

Capability of Systems to Supply Loads

- **System Capability** – forecast condition, firm capability at time of winter peaks, and capacity adequacy (capacity planning criteria)
- **System Requirements** – forecast capacity (MW peaks) and energy (kW.h) loads over next 20 to 40 years
- **New Facility Requirements** – compare forecast capability of existing facilities to forecast system requirements to identify forecast shortfalls (capacity or energy)
- **Resource Options** – to meet new facility requirements for peak capacity or energy (under different load scenarios)
- **Assessment of Options** – assessment or screening (to the extent feasible): Technical feasibility (including timing), cost efficiency, reliability, risk and other relevant considerations
 - Near term projects at different stages of pre-decision planning

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Resource Planning Framework (3) –

Current Situation Compared with 1992

- **Closure of the Faro Mine in 1998**
 - loss on WAF of 25 MW load requiring approx. 180 GWh./yr
- **Mayo-Dawson Transmission Line**
 - displaced diesel with available surplus hydro
- **Renewal of Water Licences completed**
- **Material Surplus of hydro energy remains today on both the WAF and MD grids**
 - without major new industrial loads, these surpluses could remain for most or all of the current 20 year planning period

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Resource Planning Framework (4) – Key Factors Driving Future Requirements

- **Immediate need for new WAF generation capacity**
- load growth, retirements, new capacity criteria
- **Potential new mines planned for the period to 2009**
- Minto and Carmacks Copper mines
- **A range of other longer-term industrial development scenarios** – between 2009 to 2016
- **Balance is required:** Spending today on planning for potential new loads must balance potential future benefits and risks

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Resource Planning Framework (5) – Loads, Resource Needs, Supply Options

- The types of resources required over the 20 year plan depend on the loads expected
- The duration of the load is as important as size for Resource Planning in Yukon

Load	Needs
LARGEST LOADS	
Pipeline	Major New Generation
Multiple Mines	
Large Mines	Capacity and Energy
Small Mines	
BASE LOADS	Capacity
SMALLEST LOADS	

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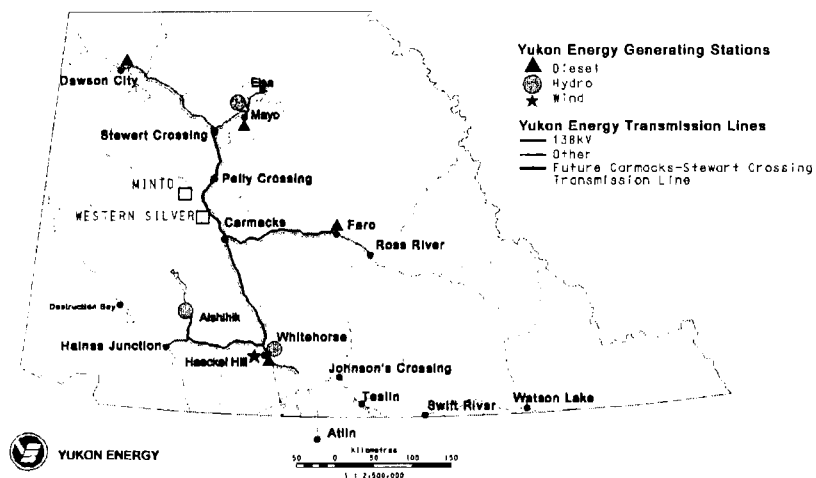
Yukon Energy's Systems – Overview of Generation and Transmission

- Yukon Energy generation capacity is 112.4 MW
 - Total Yukon generation is 127.4 MW (YECL is 15 MW, primarily in isolated diesel communities).
- Yukon Energy owns and operates the two major transmission systems (WAF-138kV, MD-69kV).
- Most of YEC's hydro and major transmission were built in response to past major mines.
 - Key reason Yukon rates today are well below levels found in Alaska or NWT (and lower than a number of places south of 60). [See Overview, p. 8]

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Yukon Energy's Systems (2)



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Yukon Energy's Systems (3)

Yukon Energy Generation Assets (in MW installed & currently rating)			YECL Generation Assets (in MW installed)		
Hydro Facilities			Hydro Facilities		
Whitehorse	WAF	40.0	Fish Lake	WAF	1.3
Aishihik	WAF	30.0	Base Load Diesel Facilities		
Mayo	MD	5.4	Old Crow	Isolated	0.7
Total Hydro		75.4	Pelly Crossing	Isolated	0.7
Wind Facilities			Beaver Creek	Isolated	0.9
Haeckel Hill	WAF	0.8	Destruction Bay	Isolated	0.9
Diesel Facilities			Swift River	Isolated	0.3
Whitehorse	WAF	22.4	Watson Lake	Watson Lake	5.0
Faro	WAF	5.3	Back-up Diesel Facilities		
Dawson	MD	5.0	Carmacks	WAF	1.3
Mayo	MD	2.0	Teslin	WAF	1.3
Mobile Diesel		1.5	Haines Junction	WAF	1.3
Total Diesel		36.2	Stewart Crossing	MD	0.3
TOTAL YUKON ENERGY			Ross River	WAF	1.0
		112.4	Total Diesel		13.7
TOTAL YUKON GENERATION			TOTAL YECL		
		127.4 (YEC + YECL)			15.0

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Yukon Energy's Systems (4) – WAF Firm Winter Capacity

- WAF system capacity is constrained in winter by:
 - Lowered output at Whitehorse Rapids hydro due to water flows and downstream ice issues (24 MW firm winter capability compared to full summer output of 40 MW).
 - High system loads due to cold-weather peaks and recent load growth.
 - No longer have any major industrial loads (typically offer own emergency back-up capability).
- Capacity to become more constrained due to:
 - Planned retirement of 11.4 MW of current diesel capacity at Whitehorse by 2011 (3 Mirrlees units).
 - Ongoing load growth (about 1 MW per year without new industrial loads).

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Yukon Energy's Systems (5) – WAF and MD Energy Supply

- Today over 90% of generation in the Yukon comes from hydro (99% of YEC's generation)
- About 90 GW.h of surplus hydro is available on WAF and about 17 GW.h on MD, in normal water years
 - Surplus hydro energy can be produced at very low cost for sale as firm power if there is a new load such as Minto Mine
 - New firm sales on WAF or MD help keep rates down for all Yukoners as a result of equalized rates per OIC 1995/90
- If WAF growth exceed the 90 GW.h of surplus hydro (or during droughts), currently need to meet energy needs with expensive diesel generation.

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Yukon Energy's Systems (6) – Asset Condition Assessment

- Major external "Condition Assessment" review of key YEC infrastructure (copies in 2005 YUB hearing)
- Most generation and transmission in good condition and can serve loads for period of Resource Plan
- Key exception is 3 Mirrlees diesel units in Whitehorse – BC Hydro indicated these units are at "end of life" without major new investment
 - These units had been planned for retirement as at 1992 review (assumed for 1998-2000) and 1996 planning (assumed for 2002-2004)
 - Recently planned for retirement in 2007-2011
 - Further delay not possible without major investment in overhauls and related facility upgrades

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New Capacity Planning Criteria – Background

- Utility planning for reliable service requires that:
 1. A system have sufficient generation (and transmission) installed to meet system peak loads
 2. The system be properly protected
 3. The system be properly maintained (including brushing)
 4. The system be properly operated in accordance with operating criteria and economic considerations
- Capacity Planning Criteria for Resource Planning (generation adequacy) deals with the first item
- Planning for peak loads does not include secondary or interruptible sales

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New Capacity Planning Criteria – Previous Criteria

- Yukon Energy initially followed the practice of NCPC
- At the 1992 Resource Plan hearing the criteria were reviewed and a slightly revised criteria was adopted:
 1. The criteria for **isolated systems** required generating capacity to be at least 110% of the anticipated peak load with the largest single unit out of service
 2. **Larger “grid” systems** added new reserve requirement equal to “10% of installed diesel” on top of the 110% anticipated peak load with the largest single unit out of service
- The transmission system was not considered in the assessment

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New Capacity Planning Criteria – Concerns over Previous Criteria

- YEC noted in 2005 YUB Application concerns about capacity planning criteria
 - Application of old criteria was indicating WAF generation was still adequate even if only 36 MW installed in Whitehorse (after retire Mirrlees), despite local peak of 46.7 MW – situation not occur anywhere else on integrated grids
- Also recognized that old criteria did not consider Aishihik Transmission line outages, even though 30 MW of winter generation relies on this line
- Finally, the NWT PUB had recently reviewed the Yellowknife planning and adopted new criteria that reflected modern standards and the complexities of larger integrated systems

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New Capacity Planning Criteria – Review Process

- Initiated review with help from Drs. Billinton and Karki
Considered modern standards for “generation adequacy” planning; looked at probabilities of outages
- Analysis indicated that the old criteria provided good protection for non-industrial loads in 1996/97, but is not adequate for today’s system
 - No longer have Faro mine as first load to be interrupted
 - If kept old criteria, would experience on average 3 to 6 times the outages from generation adequacy (based on hours) as typically accepted elsewhere in Canada
 - Specifically noted risks of the Aishihik transmission (30 MW)
- Worked with YEC to develop new criteria; very similar to NWT (where Dr. Billinton was also involved)

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New Capacity Planning Criteria – Newly Adopted Criteria for WAF and MD

- **WAF and MD Systems** – Each system will be planned not to exceed a Loss of Load Expectation (LOLE) of 2 hours/year
 - Other Canadian utilities typically use 1 to 2 hours
- **Emergency (or “N-1”) criterion** – Each system will be able to carry the peak (excluding industrial loads) under the largest single contingency.
 - Focuses on system capability assuming the loss of the system’s single largest generating or transmission-related source
 - Not extended to major industrial customer loads which typically maintain sufficient on-site diesel for own emergency purposes
- **“Community” Criterion** – Communities large enough to justify a diesel of about 1 MW will be preferred location for new diesels, if do not have back-up from another source.

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Overview of Resource Plan

- The Resource Plan sets out:
 - Proposed Actions for Near-Term Requirements;
 - Proposed Actions for Industrial Development Scenarios.
- YEC has not made final decisions to develop any specific near or long-term project.
 - As noted in the Resource Plan, actions are being taken to protect YEC’s ability to proceed with the initial Life Extension for the first Mirrlees diesel.

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Near-Term Requirements

- A WAF load forecast was prepared (Base Case), with three “sensitivities” including two with small mines included
- Indicates material shortfalls in Capacity

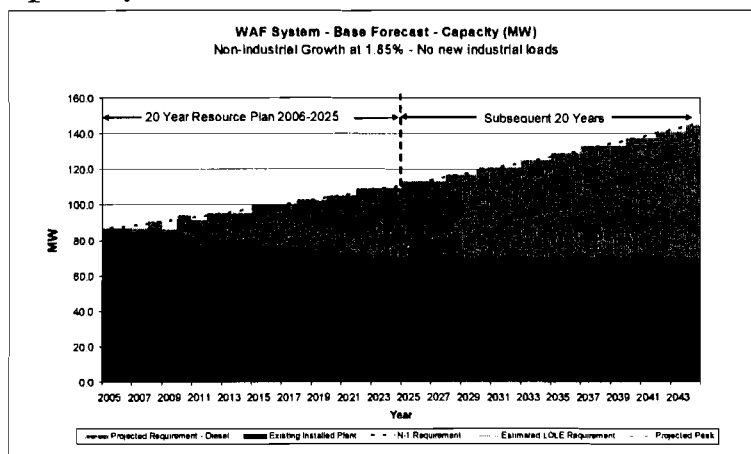
Load Case	Shortfall (MW)		
	2006	2009	2012
Base Case	0.7	12.3	18.7
Low Sensitivity Case	0.2	10.1	14.7
Base Case With Mine Loads	0.7	15.1	21.5
High Sensitivity Case Including Mines	1.4	17.9	26.7

- For Energy, there is ongoing surplus hydro through 20 year period (modest peaking diesel is needed – less than 10 GW.h under Base Case until 2020)
- With the mine loads, diesel generation may grow to about 40 GW.h by 2016, after which the mines are assumed to close.

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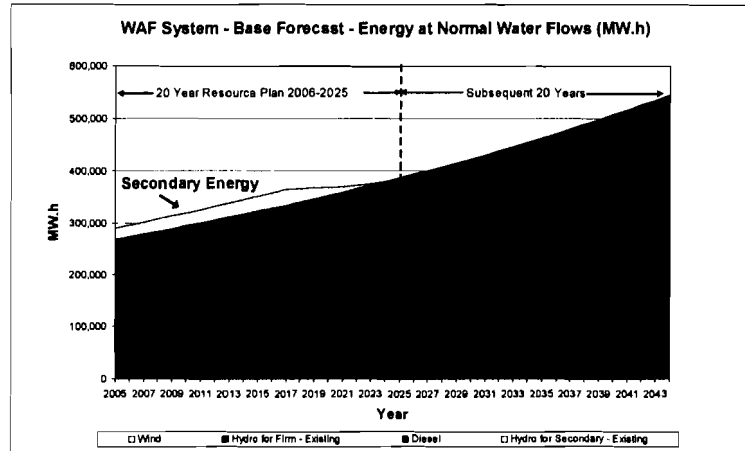
Near-Term Requirements (2) – Capacity under Base Case Forecast



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Near-Term Requirements (3) – Energy under Base Case Forecast



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Near-Term Requirements (4) – Overview of Proposed Actions

- Near-Term Requirements are being driven largely by four factors:
 1. Yukon Energy's new capacity planning criteria;
 2. planned retirements of the Mirrlees diesels in Whitehorse;
 3. ongoing load growth; and,
 4. the potential to service new mining loads from WAF surplus hydro and connect the WAF and MD systems.
- Four separate major investments are proposed for the near-term (three are above \$3 million).
- Each focuses on enhancing existing assets.

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Near-Term Requirements (5) – Proposed Actions

Summary of Near-Term Proposed Projects

Project	Firm WAF capacity (MW)	Other Benefits	Capital Cost (2005\$)
Aishihik 3rd Turbine (2009)	0.6 MW (with two mines); otherwise 0 MW	7MW hydro peaking; 5.4 GW.h/yr long-term hydro energy	7.155 million
Marsh Lake Fall-Winter Storage (2007)	1.6 MW	7.7 GW.h/yr long-term hydro energy	up to 1 million
Carmacks-Stewart Transmission Project (2008/2009)	5.6 MW in 2012; declining as MD load grows	up to 15 GW.h/yr long-term hydro energy; declining as MD load grows	31.2 million (before YTG & mine contributions)
Mirreles Life Extension (2007-2009)	14 MW		up to 6.4 million

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Near-Term Requirements (6) – Opportunity Projects

1. Aishihik 3rd turbine - \$7.155 million (2005\$)

- largely to displace peaking diesel in near term and baseload diesel over long-term
- Already have Water Board licence for project
- Detailed economics provided in Resource Plan under various conditions in Appendix C
- 7 MW capacity from project is not “firm” capacity in the planning criteria – 0 MW benefit to N-1; about 0.6 MW to LOLE with mines
- Expect final decision in 2007 for in-service by 2009 (if load growth not sufficient, may defer decision to proceed to 2009 for in-service in 2011 or 2012)

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Near-Term Requirements (7) – Opportunity Projects (con't)

2. Marsh Fall/Winter Storage - \$1 million (2005\$)

- Provides 1.6 MW of firm capacity at WH Rapids, plus up to 7.7 GW.h of average hydro energy
- Proposed to be in-service for fall 2007
- Project is largely a revision to the Whitehorse Water Licence – little to no physical works required.
- Effects of project on Marsh Lake water levels:
 - Normal years – reduce water releases from August 15 to approx. end of Sept. and hold water to winter peak times
 - Flood years – no change until after flood levels subside
 - Drought years – help alleviate summer drought levels to achieve new full supply level by August.

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Near-Term Requirements (8) – Opportunity Projects (con't)

3. Carmacks-Stewart Transmission Project - \$31.2 million (2005\$) to interconnect 2 systems (WAF/MD)

- Provides 5.6 MW of near-term firm capacity plus up to 15 GW.h of average annual hydro energy
- Provides opportunity to serve up to 2 new mines north of Carmacks
- Development of the full project is subject to provision of Yukon Government funding to ensure that there is no net cost to Yukon Energy or Yukon ratepayers
- Decision to proceed expected early in 2007
- Currently expected to be developed in two stages:
 - Stage 1: Carmacks to Pelly Crossing; includes spur line to Minto mine from near Minto Landing (plan to be in service by end of 2008)
 - Stage 2: Pelly Crossing to Stewart Crossing; would connect WAF to MD (tentative plan to be in-service by the end of 2009)

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Near-Term Requirements (9) – Major Capacity-Related Projects

1. **Mirrlees Life Extension Project - \$6.4 million (2005\$)**
 - Project to secure 14 MW backup capacity from existing units (about \$0.457 million/MW)
 - By far the lowest cost source of major capacity (new diesel expected to be \$0.930 million/MW)
 - Fit with longer-term plan for Whitehorse diesel plant, focused on need for “high density” development to secure most MW out of existing space.
 - Yukon Energy is following a staged approach – for a WD3 overhaul in 2007, with parts commitments from the manufacturer ASAP.
 - Other diesel facility modernization work also underway

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Near-Term Requirements (10) – Major Capacity-Related Projects

2. **Whitehorse Diesel – Contingency**
 - The cost of new diesel units is not competitive with the Mirrlees Life Extension
 - However, in the event that sufficient MW cannot be secured from other projects to meet load requirements by 2012, further attention to increasing the “MW density” of the Whitehorse diesel plant is required
 - Potential relevance if for some reason Carmacks-Stewart, Marsh Lake or the full Mirrlees Life Extension cannot proceed
 - Unforeseen circumstances requiring added capacity
 - Would need to consider redeployment of the EMD units (3 units - 2.5 MW to 2.7 MW) to make way for larger units
 - Costs are estimated at \$0.93 million/MW (2005\$) excluding costs to redeploy EMDs.

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Longer Term Industrial Opportunities – Overview

- There are a range of potential mine sites that might develop in Yukon over the next 20 years, as well as the Alaska Highway Pipeline
- The potential mines have different needs:
 - The life of the mines vary from 5 to 20 years
 - The peak demand of the mines range from 2 to 20 MW
 - The distance to the Yukon grids are from 0 to 273 km
- These potential loads present opportunities, but there are also challenges associated with planning and timing:
 - Must be prepared to provide service in relatively short time from the mine's commitment to build
 - Maintaining this state of readiness is very expensive for large and even small projects.

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Longer Term Industrial Opportunities (2)– Planning Considerations

- Industrial Customer Factors
 - Most mine economics not related to power – commodity prices and other factors drive development
 - Small or short lived mines may not be economic to connect
 - Customer may get value from heat if use on-site diesel
- Yukon Energy Factors
 - Long-lead time to develop generation projects; must commit in some cases before certainty about loads
 - No grid connection – generation projects can be risky when linked to just one load [WH#4 story at page 36 of Overview]
 - Scale can exceed YEC's financial and technical capability

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Longer Term Industrial Opportunities (3)– Regulatory and Policy Framework

- **Pay full cost of service** – per Yukon Order-in-Council, industrials must pay the full costs to serve them (treating Yukon as single rate zone), as well as for any dedicated assets
- **Opportunity to sell existing surplus hydro** – new loads today up to about 10 MW can be served primarily by surplus hydro.
 - Based on Yukon Rate Equalization OIC, all Yukoners will benefit from this, even those in isolated diesel communities
- **Must meet normal utility “obligation to serve”**
- **Can provide opportunity to build new capital intensive low-cost generation** – If large and long-lived, new industrial customers can provide the opportunity to put in place new hydro or other capital intensive generation

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Longer Term Industrial Opportunities (4)– Matching Opportunities to Loads

- Key factor with potential developments is matching generation with loads
- Conducted detailed review of technology options; based on this, continued focus in Yukon for large new generation is on hydro, with possible future natural gas (if pipeline proceeds) and thermal such as coal (if local supply is made available and environmentally sound).
- “Load fit” is key technical criteria:
 - Loads up to 10 MW – no need for new energy
 - 25 MW loads – consider 7-10 MW, 50 GW.h hydro
 - 40 MW loads – 100-150 GW.h if load is sustained
 - Pipeline (120-360 MW) – large/very large projects (30+ MW)

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Longer Term Industrial Opportunities (5)– Proposed Actions – Preferred Options

- **Up to 10 MW** – focus on existing hydro system enhancements; if sustained consider 1-4 MW new hydro and DSM
- **25 MW** – existing system enhancements, plus other new generation of 7-10 MW; also DSM and potentially wind
- **40 MW** – proceed with planning new generation up to 20-30 MW; however, not sufficient likelihood today of this arising to make investments to protect projects
- **Pipeline** – consider capability to serve loads: joint venturing, federal government participation.

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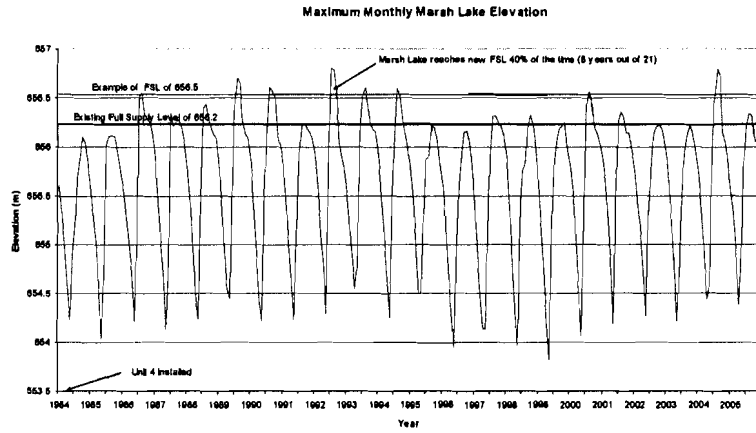
Longer Term Industrial Opportunities (6)– Proposed Actions - Other

- **Pre-commitment Activities** – prior to certainty developing on loads, YEC to carry out the following:
 - **Ongoing close load monitoring**, via discussions with exploration companies active in Yukon
 - **Southern Lakes hydrology**, continuing assessment of further Whitehorse Rapids enhancement opportunities
 - **Assess other hydro facility improvements**, such as re-running and potential diversion projects
 - **Ongoing monitoring of hydrology for credible sites <30 MW**, at a cost of between \$1k per year per site (seasonal) to \$30k one time plus \$10k-\$15k per year per site for full-time recording station.
 - **Level 1 and 2 assessments of potential 5-30 MW hydro**. Not recommended today, but to proceed is any large loads (such as Red Mountain) proceed to advanced licencing and likely commitment stages.

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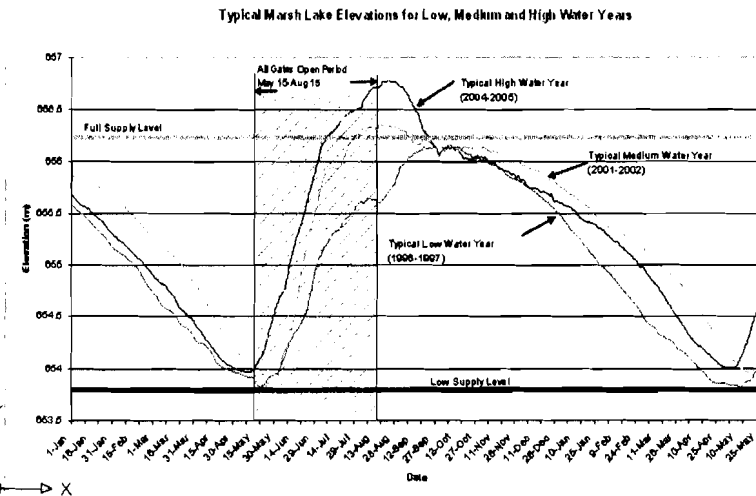
Marsh Lake Historical Lake Elevations



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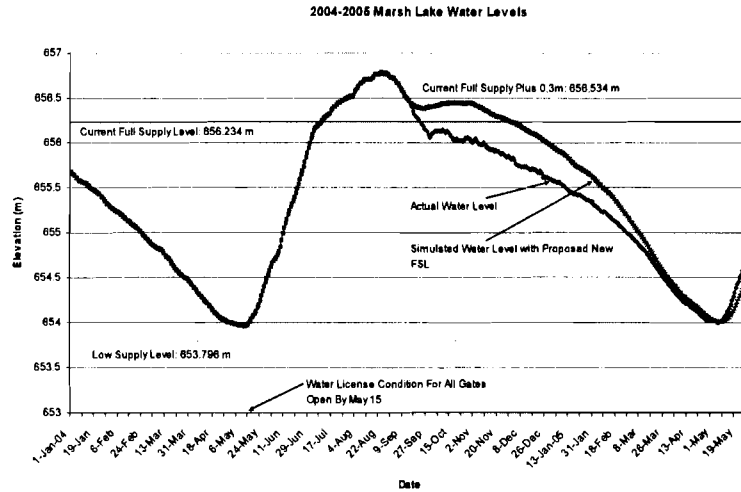
Near Term Requirements (5)



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Example of Marsh Lake Higher Fall Storage



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Potential Industrial Loads

Project	Proponent	Distance To Grid (km)	Peak Demand (MW)	Annual Energy (GWh)	Project Life	Assumed In-Service Date
Alaska Highway Pipeline, WAF						
120 MW to 360 MW ¹						
Kluene Compressor	Foothilla Pipeline	147.2	30	223.4	30	2012-15
Champagne Compressor	Foothilla Pipeline	3	30	223.4	30	2012-15
Marsh Lake Compressor	Foothilla Pipeline	30	30	223.4	30	2012-15
Rancheria Compressor	Foothilla Pipeline	330	30	223.4	30	2012-15
Potential Mine Developments, WAF						
11 to 20 MW						
Division Mountain Coal	Cash Minerals Ltd.	20	15	105	15	2010
Red Mountain	Tinlina Mines Ltd.	83	11 to 20	81 to 126	20	2009
Adanac	Adanac	approx 120	15	Unknown	20	2010
1 to 16 MW						
Minto Property	Sherwood Mining Corp.	98	2	14	12	2007
Carmacks Copper	Western Silver Corp.	53	7	50	8.5	2006
Wolverine	Yukon Zinc	273	5.1	37	9	2009
Kudz Za Kayah	Tack	218	8.8	83	11	2011
Mt. Skukum	Tagish Lake Gold Corp.	47	1.5 to 2.7	11 to 20	8	2008
Potential Mine Developments, MD						
1 to 10 MW						
Dubhn Gulch Property	Strela Gold Corp.	27	4	20	10	2009
UKHM	Under YTG Management (in due diligence)	0	2	14	5	2007

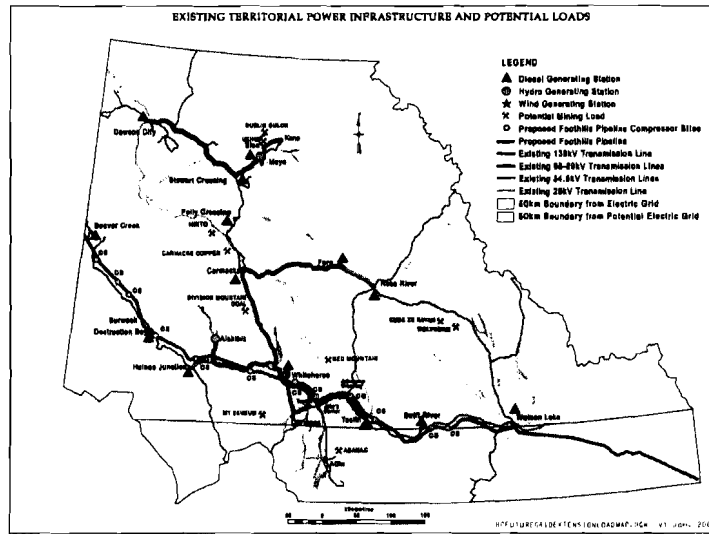
1-The initial four compressor stations are shown here. Up to eight additional compressor stations (each with similar 30 MW potential load) could be added within the following four to five years. The pipeline electrical loads in this table assume use of electric power rather than natural gas from the pipeline to run these compressor stations. There will also be some ancillary pipeline power loads in any event (not shown here) even if the compressor stations use natural gas.

When considering potential start dates and development uncertainties for any of the above mine projects, it is relevant to note that many of these industrial developments have been under active consideration as "near term development" prospects for some time.

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Potential Industrial Loads (2)



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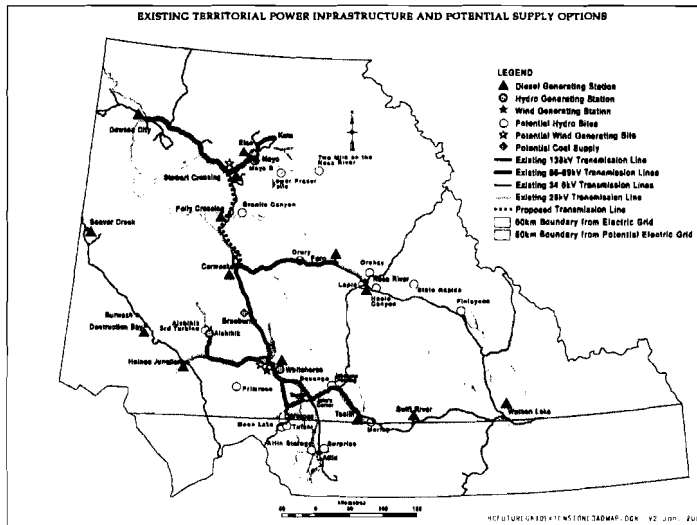
Potential Industrial Loads – Alaska Highway Natural Gas Pipeline

- Estimated the pipeline may require 120 MW to as high as 360 MW of electricity
- At present, there are 127.4 MW of installed capacity in Yukon.
- The development of a natural gas pipeline could encourage or justify the construction of large hydro or other capital intensive projects
- The terms of the current pipeline agreements state that the proponent will be required to use electric compression if it is "reasonably economic"
- Along with opportunities to serve, a pipeline would also provide new resource options in the form of natural gas generation

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Potential Major Supply Options



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Potential Major Supply Options – Hydro Projects

	Grid	Installed MW	Annual Energy (GWh)	Capital Cost (2005\$millions) (excl. trans.)	Trans. Distance (km)	In BC	Capital Cost LCOE (cents/kWh) excl. trans. (2005\$ real)
Existing Hydro Enhancements							
Aishihik Diversions	WAF	0	total of 24	n/a	0		n/a
Atlin Storage	WAF	2	9	n/a	0	X	n/a
Very Small Hydro Projects (1-4 MW)							
Diary	WAF	2.8	23	31	0		7.2
Squanga	WAF	1.75	8.3	12	5		7.7
Ochay	WAF	4.2	27	47	15		9.2
Morley	WAF	4	22	31	30		7.5
Lape	WAF	2	10	14	8		7.4
Small Hydro Projects (5-10 MW)							
Moon	WAF	8.5	50	51	96	X	5.4
Surprise	WAF	8.5	50	50	100	X	5.3
Tutshi	WAF	7.5	50	79	25	X	8.4
Mayo B	MD	10	48	101	0		11.2
Medium Hydro Projects (10-30 MW)							
Premrose	WAF	28	141	191	100		7.2
Finlayson	WAF	17	129	179	230		7.4
Large Hydro Projects (30-60 MW)							
Hoole	WAF	40	275	412	100		8.0
Slate	WAF	42	252	422	172		8.9
Two Mile Canyon on the Haas	MD	53	280	380	n/a		7.2
Very Large Hydro Sites (60+ MW)							
Granite	WAF	80 (up to 250)	680	706	125		5.7
Fraser Falls	MD	100 (up to 450)	813	555	n/a		4.8
Yukon River (such as Rink Rapid, Eagles Nest, Five Fingers)	WAF	various 75-240	n/a	n/a	n/a		n/a

LCOE – Levelized Cost of Energy at the site (excludes transmission) in 2005\$. Used as one of four screening factors, along with:

- Transmission distances
- Load fit
- Other charges, such as BC water rentals

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