INFORMATION RELEASE

TRANSMISSION SYSTEM TRANSFER CAPABILITY LIMITS
Upgrade Options & Cost Estimates

OVERVIEW

This Information Release is intended to provide an overview of the transmission constraints as it relates to potential new generation activity in the entire province. The purpose of this information is to provide relevant information for IPPs who are locating new projects in the province. The information is provided according to the four regions of the province: Lower Mainland, Northern Interior, Southern Interior and Vancouver Island.

This Information Release is an update of the previous information release dated October 28, 2005.

The transmission system is dynamic by nature. The flow of electricity constantly changes in response to shifts in generation and demand. The maximum flows on each circuit under steady-state system conditions are limited by the size of the conductor, the thermal limits for ground clearance and conductor temperature, and voltage limits. The amount of power that is transmitted along a transmission path is limited by the most restrictive of these constraints at interfaces, or "flowgates" commonly referred to as cut-planes.

It should be noted that transient stability and voltage stability constraints for secure stable operation through possible system single-contingency disturbance conditions (faults) could be more restrictive. However, these stability constraints would need to be determined by specific case studies.

Based on BCTC's current knowledge of IPP projects being proposed, BCTC has identified key regional cut-planes, where there are capacity restrictions under the most limiting time during the year: either Light Summer, Heavy Summer or Heavy Winter load periods. The power flow is usually highest under Heavy Winter conditions; whereas, the line thermal ratings are lowest during Summer conditions. This posting indicates the limitations and impacts of adding new generation in areas based on the project's size (MW) and location in relation to the cut-plane.

The estimated available transfer capacity (ATC) at the identified cut-planes is based on the forecast 2008/09 winter peak and 2009 summer system conditions. This posting does not guarantee the available transfer capacity (ATC) across the selected cut-planes. The reported ATCs are planning level estimates for generation meant to serve load within the provice and are not related to ATC's for point to point transmission service under BCTC's Open Access Tariff.

In this information release, system reinforcement options or network upgrades have been identified, which could make additional transmission service available in these specific regions within 3 years. Estimated costs and lead times for these reinforcements are included. These are coarse preliminary estimates and hence subject to change when detailed investigations are undertaken. The process for activating one of these upgrades to the system is outlined in the BCTC Tariff Processes. It is important to note that the recovery of the cost of any reinforcements would be in accordance with BCUC policy. Also, the reinforcement options do not necessarily reflect all possible solutions to the constraints. These options may ultimately not be recommended by BCTC as the most efficient, long-term upgrade solutions for that area.

BCTC is committed to continuing to provide relevant, timely information about BC's transmission system. To that end, we intend to augment the information in this report with similar postings for other areas where potential generation activity is identified. BCTC will update this information as new constraints and/or new upgrades are identified, or when there are significant changes in system configuration, generation resources and load.

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INTRODUCTION

This notification provides the expected capability of the transmission system in the Lower Mainland region in 2008/09 based on the existing system and commitments. It indicates the limitations and impacts of adding new generation in the Lower Mainland region in terms of size (MW) and location for serving the load in the entire province. Based on BCTC's current knowledge of IPP projects being planned, BCTC identified key cut-planes, where there are capacity restrictions. The available transfer capability (ATC) of the transmission system across selected cut-planes has been identified based on thermal current ratings of the transmission system in the most limiting time during the year. Other considerations in determining the impact of new generator additions on the system, such as transient stability, changes in fault levels at adjoining stations, and protection and control requirements could be more restrictive or require system investments. These factors have not been evaluated.

TRANSFER CAPABILITIES

The approximate annual firm transfer capabilities in the specified direction are given for the following cut-planes in the Lower Mainland region which is subdivided into the Metro Sunshine Coast region (M) and the Fraser Valley East region (FVE):

M-1) North of Sechelt - across line 1L44, from Clowhom towards and up to Sechelt

M-2) East of Gibson - across line 1L31, from Cheekye towards and up to Gibson.

M-3) East of Pender Harbour tap - across line 1L35, from Sechelt towards and up to Malaspina.

M-4) East of Sechelt - across line 1L32, from Gibson towards and up to Sechelt.

M-5) West of Howe Sound Pulp and Paper - across line 2L47, from Howe Sound Pulp and Paper towards and up to Malaspina.

M-6) North of Malaspina – across 1L48 segment from Saltery Bay towards and up to Malaspina.

FVE-1) South of Spuzzum - across line 60L10 segment from Spuzzum towards and up to Wahleach.

FVE-2) South of Hope - across line 60L95, from Hope towards and up to Wahleach.

FVE-3) Mid-line on 3L2, Bridge River (BRT) –Rosedale (ROS) 360 kV line – generation supply injection limit at point of interconnection (POI) mid-point on 3L2 into the Lower Mainland grid.

The cut-planes and directions of the transfer capabilities are as illustrated in the attached figures.

The following table shows the approximate transfer capabilities for the above cut-planes.

Transfer Capabilities for Planned 2008/09 System (based on current forecast and known commitments)				
Cut plane	**TTC (MW)**	**CU (MW)**	**ATC (MW)**	**Limiting Condition**
M-1	60	65	-5	LS, n-0
M-2	60	-20	80	LS, n-1
M-3	60	45	15	LS, n-1
M-4	60	-10	70	LS, n-1
M-5	210	90	120	LS, n-0
M-6	150	80	70	LS, n-0
FVE-1	50	35	15	LS, n-0
FVE-2	80	-5	85	LS, n-1
FVE-3*	450	440	10	LS, n-1

TTC: Total Transfer Capability ATC: Available Transfer Capability

CU: Committed Use (maximum) ATC = TTC – CU
LS: Light Summer
n-0: No element out-of-service n-1: One element out-of-service

*ATC is 300 MW with Generation shedding RAS for N-1 outage of 3L2 POI to ROS.

The given ATC for cut-planes in the above table implies the maximum aggregate amount of new generation that can be added in the region on the delivery side of the respective cut-planes without transmission reinforcements. The ATC for these cut-planes is limited by the maximum generation surplus in the area under light summer load conditions, which would have to flow across the cut-planes.

Additional transmission service can be made available through the BCTC Tariff Processes.

Reinforcement Options:

The feasible options and the respective incremental power transfer capacity are identified for each cut-plane below. Costs are reported in 2005 dollars. Larger projects may have longer lead times because more time may be required for the regulatory approval process and construction. An estimate of lead time has been provided. There are no upgrade options for cut-planes M-2 to M-5 at this time.

Cut-plane M-1:

M-1-A. Increase operating temperature of line 1L44 to 60^{o}C. This will increase the line summer rating of 1L44 to 80 MVA.

Cut-plane M-6:

M-6-A. Increase line summer rating to 290 MVA at 138 kV.

M-6-B. Upgrade to 230 kV with a line summer rating of 400 MVA.

Cut-plane FVE-1:

FVE-1-A. Upgrade line 60L10 to an Orchid conductor with operating temperature of 90^{o}C. This will increase the summer line rating to 95 MVA.

Cut-plane FVE-2:

FVE-2-A. Increase operating temperature of line 60L95 to 90°C. This will increase the summer line rating to 95 MVA.

Cut-plane FVE-3:

FVE-3-A. Add a second 360/230 kV transformer at Bridge River.

New ATC for Reinforcement Options for Cut-planes M-1, FVE-1 and FVE-2					
support Option	**Total Cost ($ million)**	**ATC Forecast for 2008/09 (MW)**	**Incremental ATC (MW)**	**New ATC (MW)**	**Lead Time (Months)**
M-1-A	1	-5	20	15	12
M-6-A	14	70	70	140	24
M-6-B	8	70	180	250	12
FVE-1-A	16	15	45	60	36
FVE-2-A	1	85	15	100	18
FVE-3-A	9	10	290	300	24

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Disclaimer:

The reinforcement options set out in this Information Release do not reflect all possible solutions to the identified ATC constraints. The information set out in this Information Release is based on a number of assumptions, only some of which have been identified. The reinforcement option costs set out in this Information Release are estimates only based on those assumptions. Changes to relevant factors (including without limitation different load and generation forecasts or different construction timelines for the reinforcement options) may make those assumptions invalid, and therefore the actual reinforcement options available and their costs may differ substantially from those presented here.

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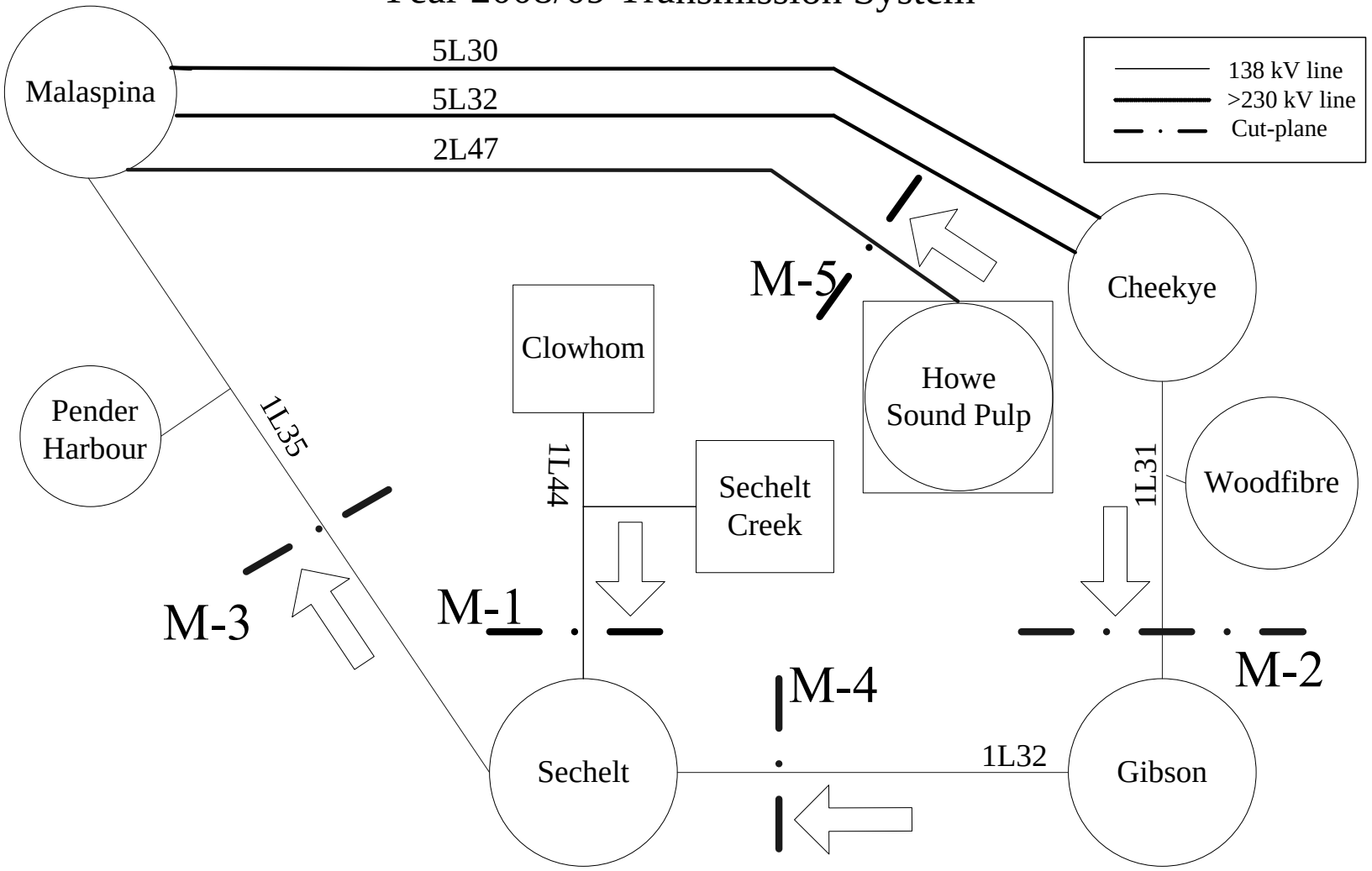
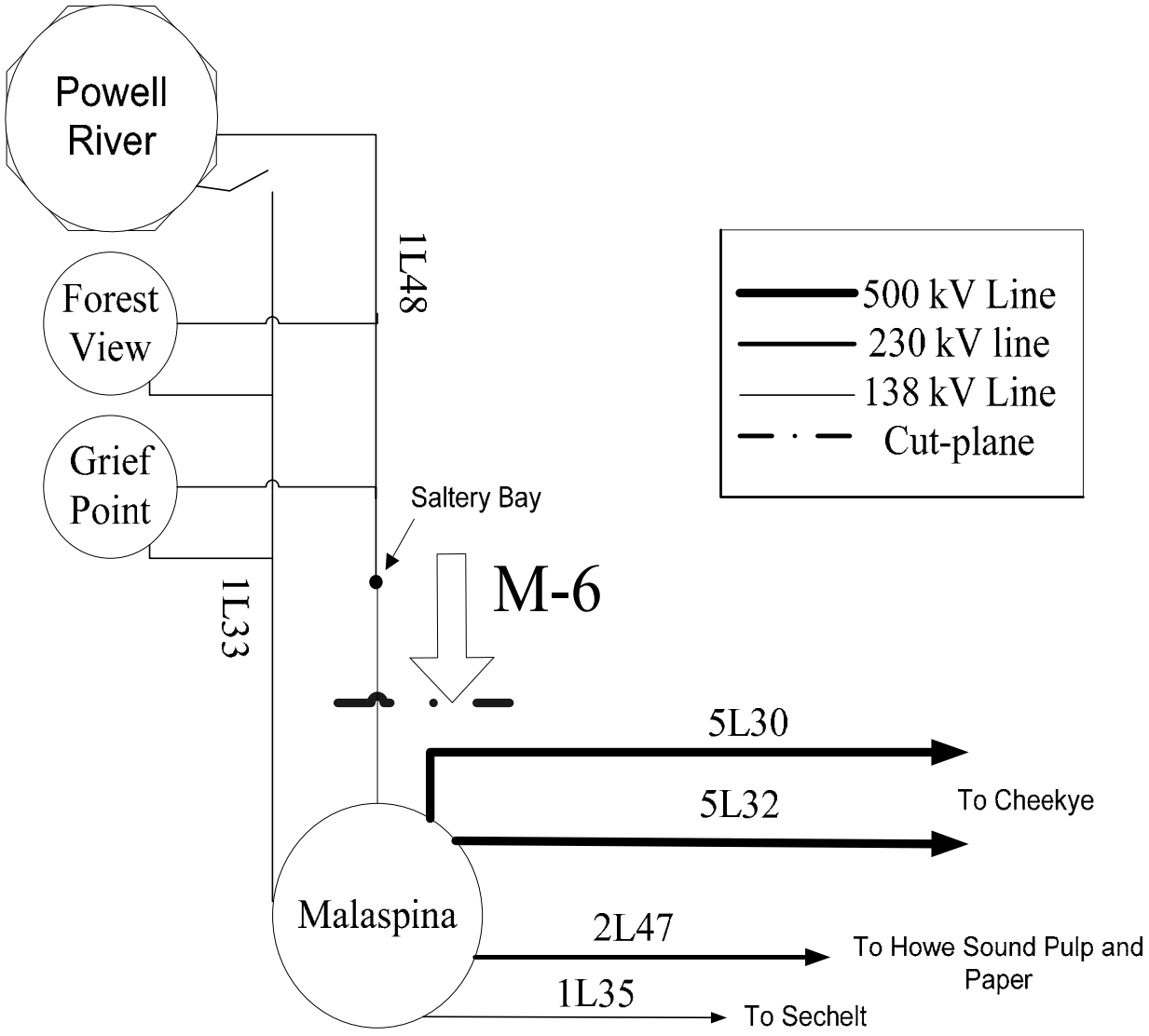
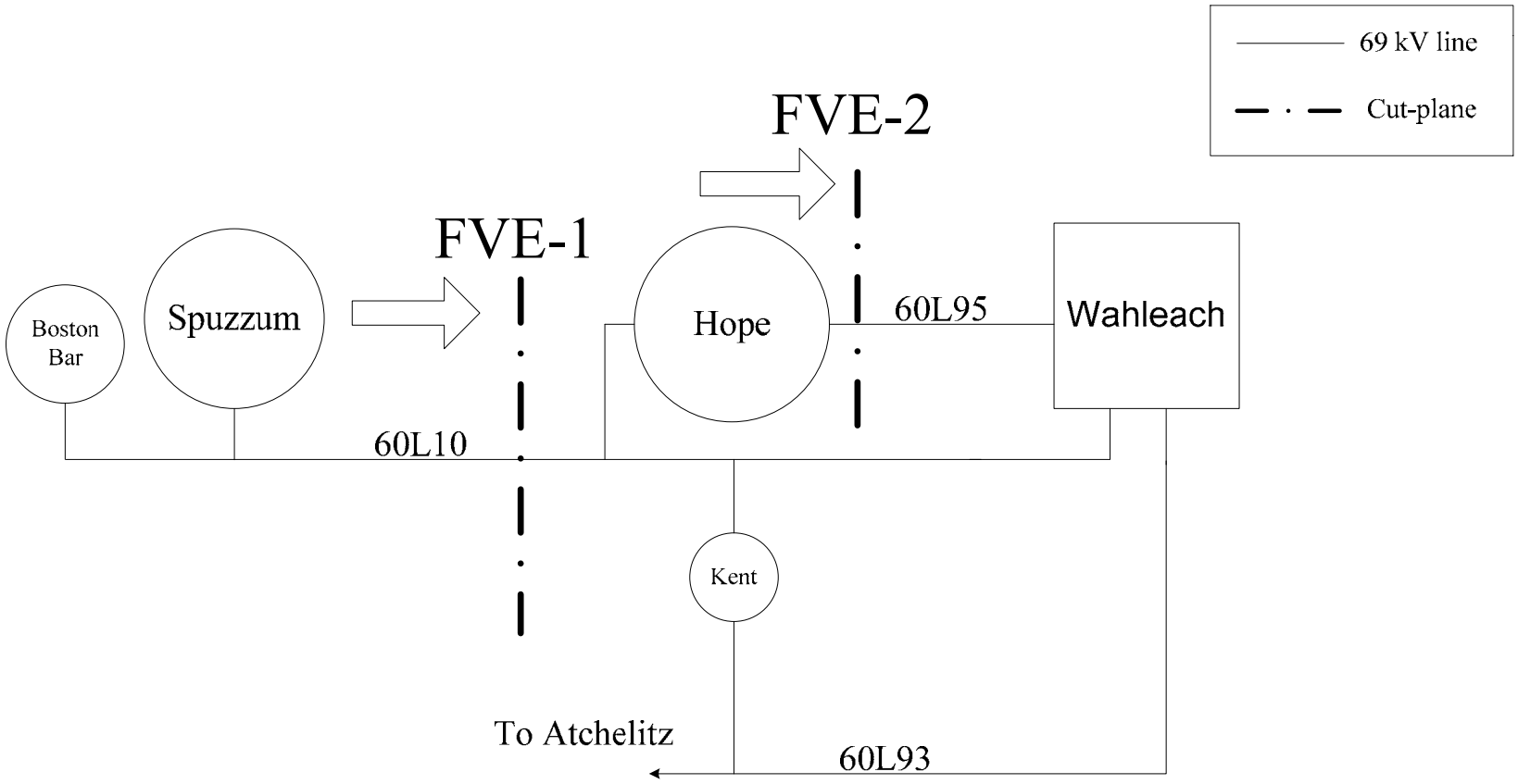
Year 2008/09 Transmission System



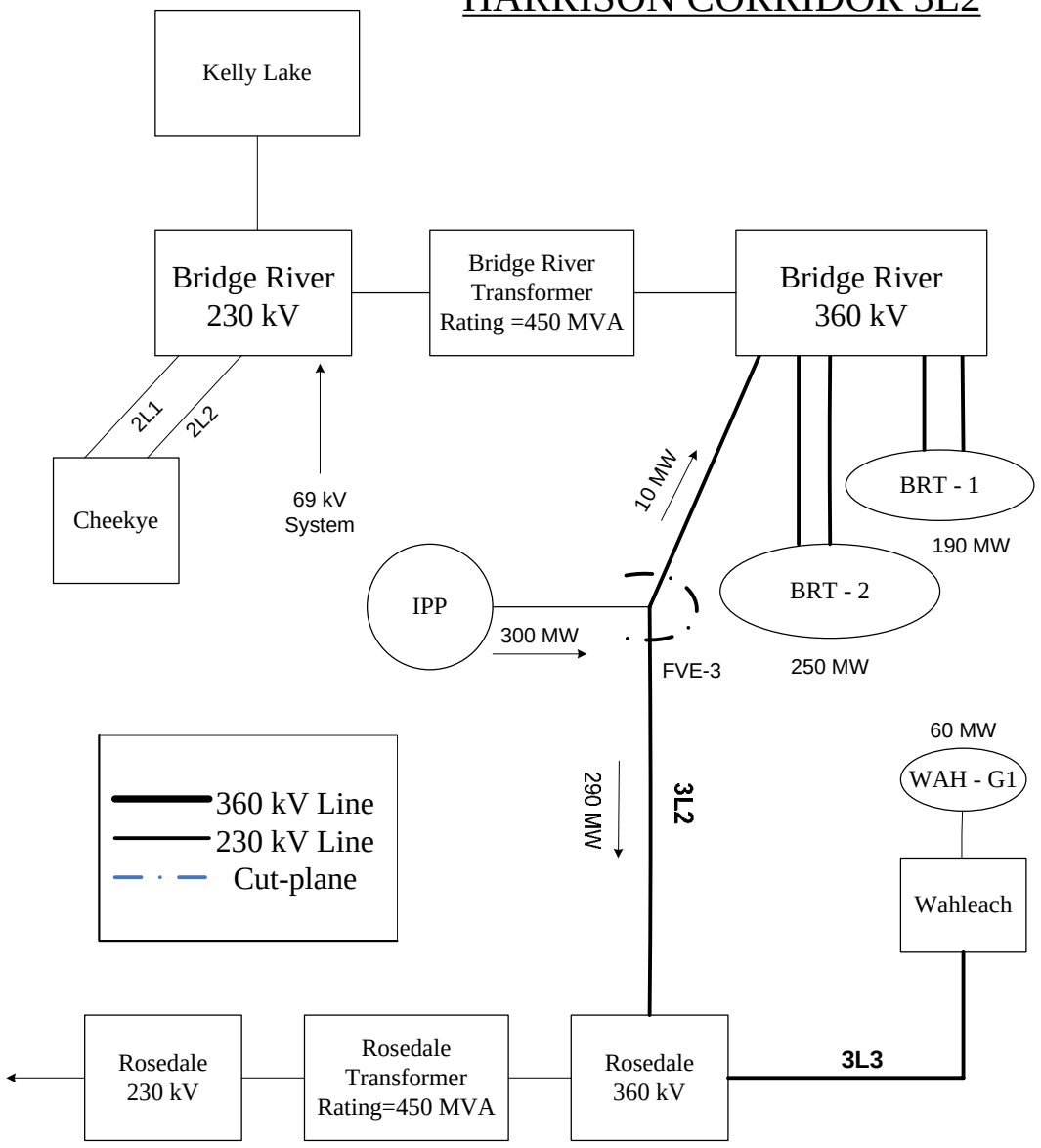
Year 2008/09 Transmission System

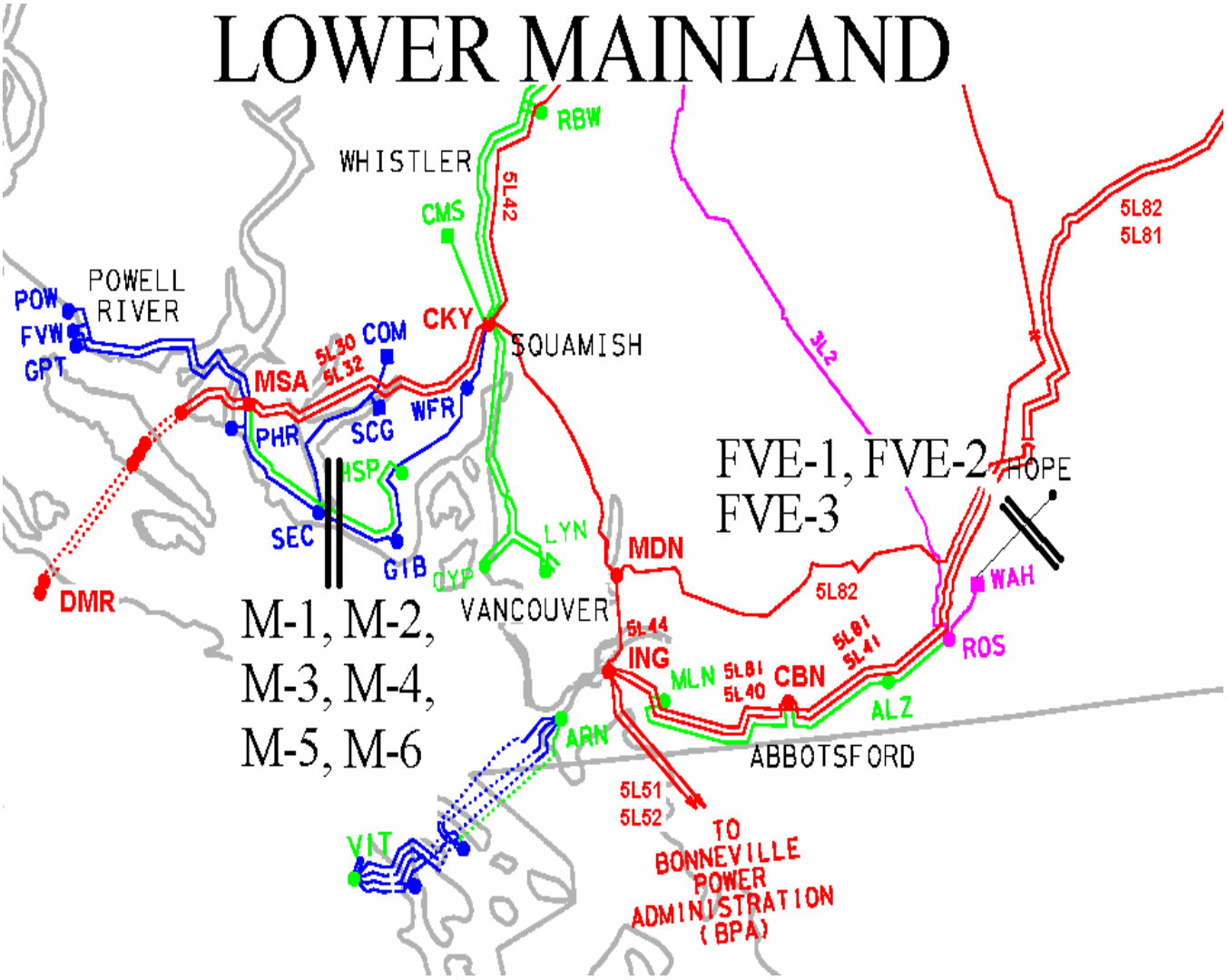


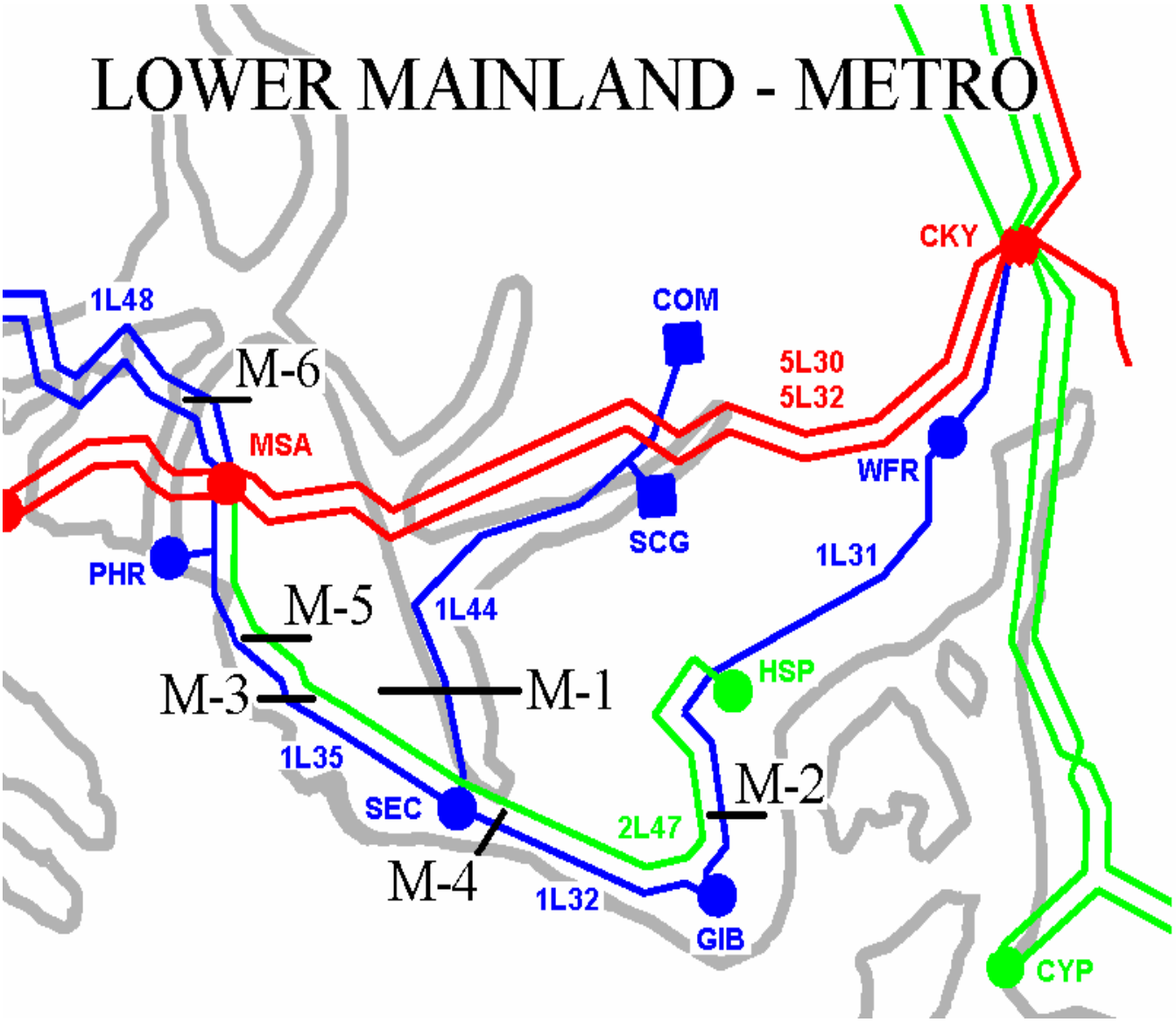
Year 2008/09 Transmission System



FVE-3 CUT-PLANE
HARRISON CORRIDOR 3L2




LOWER MAINLAND
WHISTLER
RBW
CMS
5L42
POWELL RIVER
POW
FVW
GPT
CKY
SQUAMISH
5L30
5L32
COM
MSA
PHR
SCG
WFR
HSP
SEC
GIB
DMR
M-1, M-2,
M-3, M-4,
M-5, M-6
FVE-1, FVE-2
FVE-3
HOPE
5L82
5L81
3L2
LYN
CYP
VANCOUVER
MDN
5L82
WAH
5L44
ING
MLN
5L81
5L40
CBN
5L81
5L41
ROS
ALZ
ARN
ABBOTSFORD
5L51
5L52
TO BONNEVILLE POWER ADMINISTRATION (BPA)
VIT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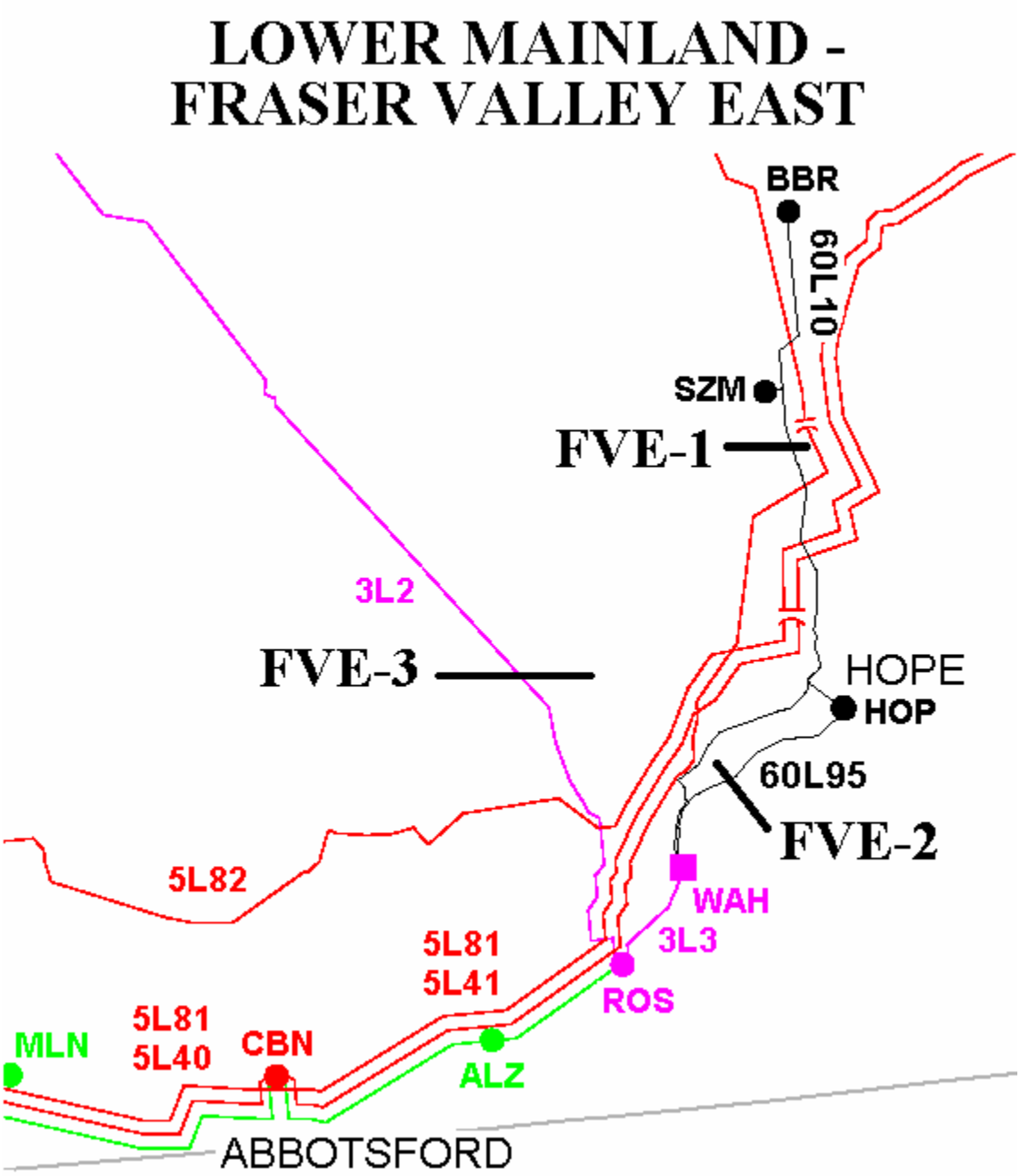
M-6
5L30
5L32
MSA
WFR
SCG
PHR
1L31
M-5
1L44
HSP
M-3
M-1
1L35
M-2
SEC
2L47
M-4
1L32
GIB
CYP


LOWER MAINLAND -
FRASER VALLEY EAST
BBR
60L10
SZM
FVE-1
3L2
FVE-3
HOPE
HOP
60L95
FVE-2
5L82
WAH
3L3
5L81
5L41
ROS
5L81
5L40
MLN
CBN
ALZ
ABBOTSFORD