

CHAPTER 5 – MAINLINE FACILITY REQUIREMENTS

5.1 Introduction

This chapter details the proposed natural gas transportation mainline facilities required to be in-service on the Alberta System to transport the design flow requirements and peak expected flows shown in Chapter 4 for the Planning Period. Where applicable, information is included regarding size, routes, locations and cost estimates for the proposed facilities together with descriptions of the next best alternative facilities.

An overview of the facilities requirements for the Planning Period was presented at the TTFP meeting on November 18, 2008.

In this Annual Plan, design capability is determined using the design flow requirements and peak expected flows with facilities that are currently in-service and the facilities that are being constructed for the previous Planning Period. The design capability with proposed facilities is based on the June 2008 design forecast for the Planning Period.

Where new facilities are proposed, a table comparing proposed facilities and next best alternative facilities has been included, where applicable. Flow schematics, based on design flow requirements for the design areas requiring facilities, with and without the proposed facilities, are provided in Appendix 3.

5.2 System Optimization Update

As described in Section 2.8.1 of this Annual Plan, system optimization continues to be an integral part of the regular facility design review and planning to meet the system design flow requirements.

There are no facilities identified for retirement for the Planning Period resulting from the 2008 design review.

5.3 Facilities Requirements

In this Annual Plan only the design areas where facilities are required for the Planning Period are included.

5.3.1 North and East Project Area

The North and East Project Area comprises the North of Bens Lake Design Area and the South of Bens Lake Design Area as described in Section 2.3.2. The proposed facilities for the North and East Project Area are identified in Figure 5.3.1.

**Figure 5.3.1
North and East Project Area
Proposed Facilities**

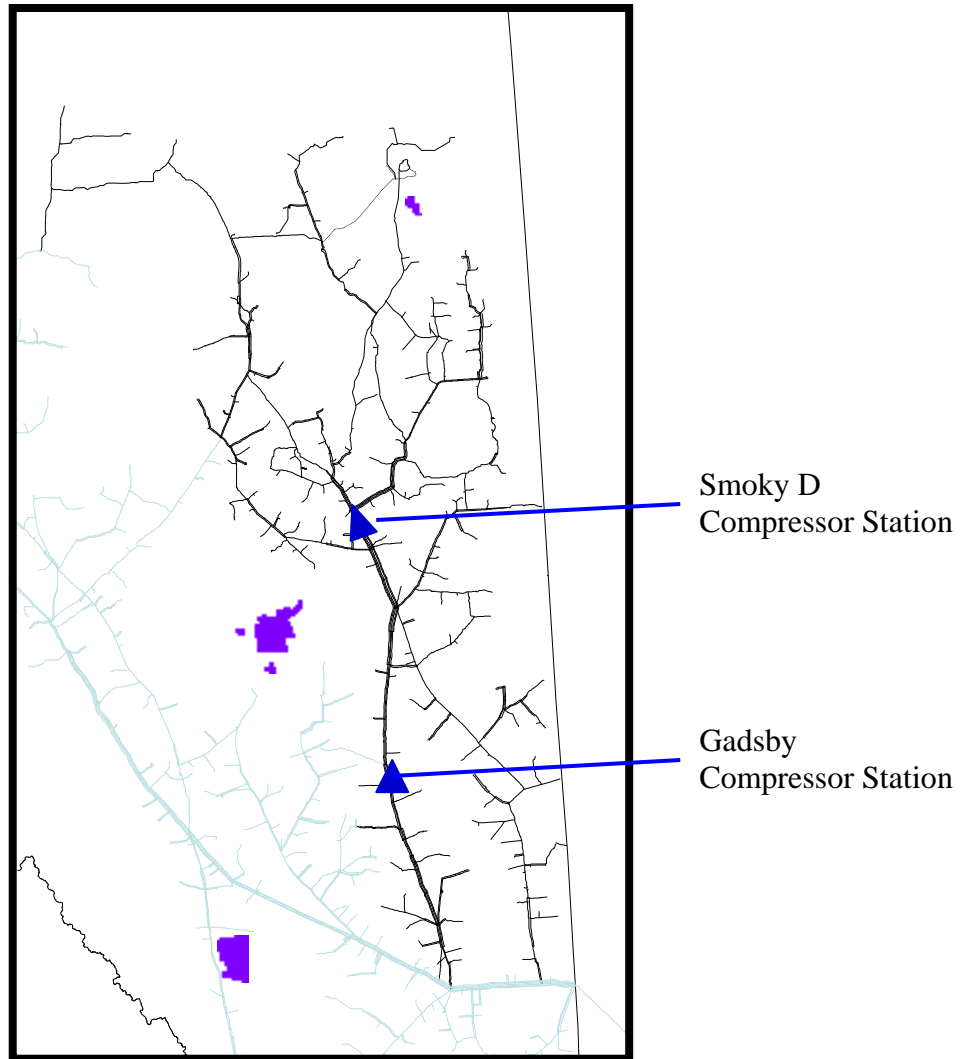


Table 5.3.1
North & East Project Area
Proposed Facilities

Proposed Facility	Description	Required In-Service Date	Capital Cost (\$millions)	Facility Status
Miscellaneous ¹		November 2009	12.1	
TOTAL			12.1	

Note:

1 Miscellaneous represents compressor station yard modifications at Gadsby and Smoky D Compressor Stations.

In the North and East Project Area, there are two distinct flow conditions evaluated to determine facilities requirements. The two flow conditions used for design are the called “flow through” and “flow within” as described in Section 2.6.1.2. The flow through the area condition uses the North and East Project Area delivery assumption. The flow within the area condition uses the North and East Project Area maximum day delivery flow assumption.

Additional facilities are required to be placed in-service based upon the June 2008 design forecast to transport the Planning Period design flow requirements, based on the flow within the area design flow assumption, shown in Table 4.2 for the North and East Project Area.

Compressor station yard modifications are proposed at each of the following compressor stations: Gadsby and Smoky D for the Planning Period. Without the modifications at the Gadsby and Smoky D Compressor Stations, capability to meet the maximum day delivery within the North and East Project Area will have a shortfall of approximately $4597 \times 10^3 \text{ m}^3/\text{d}$ (163 MMcf/d). Alternative facilities to meet maximum day delivery in the North and East Project Area would consist of compressor unit additions at each of the Gadsby and Smoky D compression station sites at a significantly greater cost. The proposed compressor station yard

modifications are the most economic way to transport additional gas to meet the North and East Project Area requirements.

The installation of the proposed facilities will provide the design capability to transport 100% of the forecast North and East Project Area requirements for the Planning Period as shown in Table 5.3.1.1.

**Table 5.3.1.1
North and East Project Area
Maximum Day Delivery June 2008 Design Forecast
Design Capability vs. Design Flow Requirements**

Gas Year and Season	Design Capability without Proposed Facilities (% of Maximum Day Delivery)	Design Capability with Proposed Facilities (% of Maximum Day Delivery)
2009/10 Winter	94	100
2009/10 Summer	100	100