

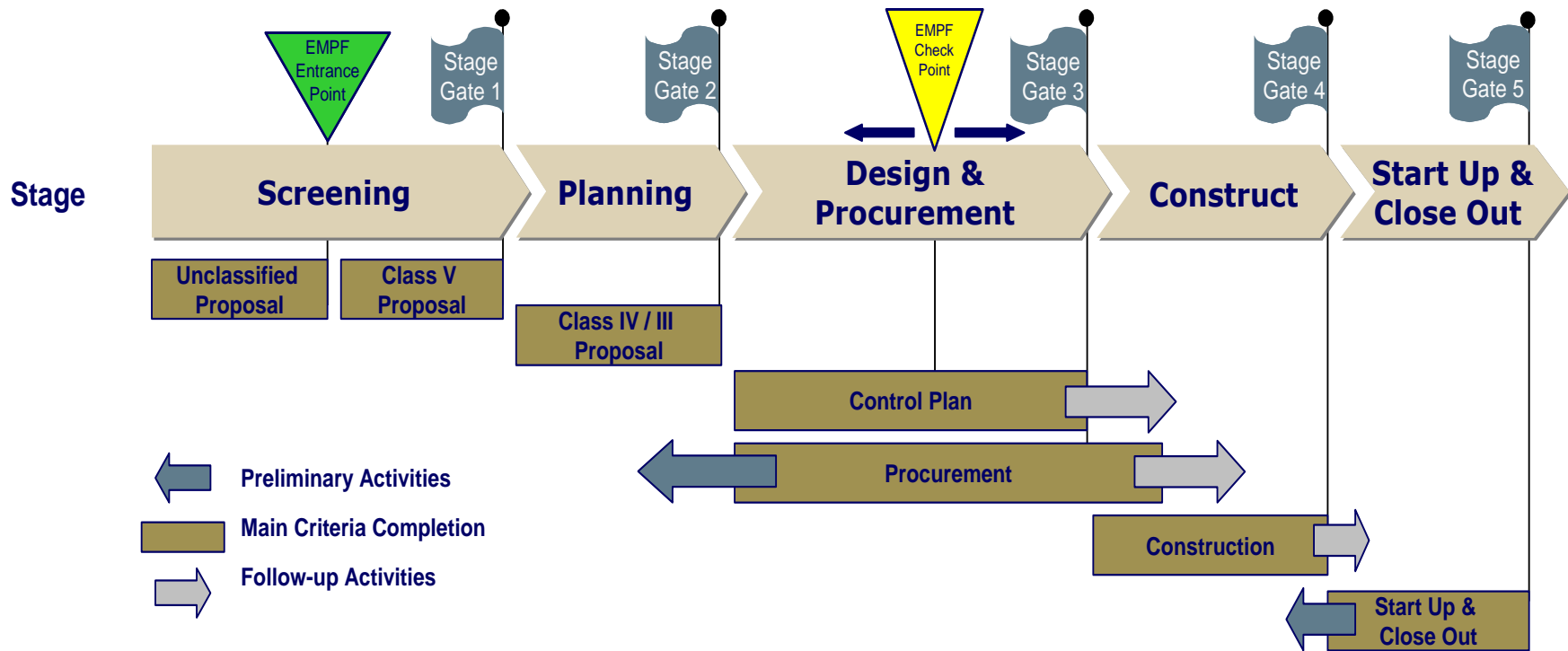
Presentation to the MPMO

28 May 2008

Life-Cycle of a Major Project (s. 52) at Enbridge



Major Project Framework



Stage 1 - Screening



- **The “Twinkle in Your Eye”**
- **Primarily led by Business Development**
- **Commercial needs and initial project scope defined**
- **Initial project planning includes regulatory, environmental, land acquisition, engineering, contracting and procurement**

“The Twinkle in Your Eye”



- **Project concepts and the nature of negotiations evolve in many ways:**
 - Enbridge Initiative (Southern Lights)
 - Industry/CAPP Consensus (Alberta Clipper)
 - Individual Customer Needs/RFP Process (Fort Hills)
 - Multi-Party Contractual Agreement (Waupisoo)

Key Customer Needs



- **Manage production growth profile**
- **In-service dates to ensure no shut-in of production**
- **Product quality concerns**
- **Flexibility and reliability**
- **Competitive tolls**

Competitive Drivers



- **Ability to execute the project within desired timeframes**
- **Ability to control capital costs**
- **Competitive toll design**
- **Operational history/reliability**

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- **Commercial activities began in 2005**
- **Agreement with CAPP in summer 2006**
- **Desired completion date December 2009**
 - Little over 3 years to plan, obtain regulatory approval, finalize design and construct to meet customer needs

Stage 2 - Planning



- **Commercial scope completed**
- **Regulatory, environmental, contracting and procurement and land acquisition plans updated and initiated**
 - Environmental work constrained by seasonality of surveys and studies
 - Pipe mill space needs to be booked at least 1 year in advance (IPSCO is now booked up for 3 years)
 - Several months to produce pipe and 4-6 weeks needed to stockpile
 - Lead times for pumps and motors are about 1 year, with some specialty items up to 70 weeks
- **Engineering and land begin the process of refining the route and project design**
- **Public and Aboriginal consultation plans initiated**

Commercial Certainty



- **Binding Commercial Agreement that traditionally addresses:**
 - Project scope
 - Capital cost estimate
 - Project execution issues including appropriate plan/schedule
 - Toll design

Route Selection



Straight line between two points is optimal, but...

- **Environment**
- **Terrain**
- **Geotechnical**
- **Existing corridors**
- **Control points**
- **Future growth**
- **Land acquisition**
- **Regulatory**
- **Line of sight – accessible**
- **Aboriginal Traditional Knowledge**

Application Process



- **Regulatory Sub-Team created with leads from each functional group**
- **NEB Filing Manual provides guidance re: content of the application**
- **Each functional group provides their information to the Regulatory Lead**
 - Start to acquire land and provide report on progress
 - Environment drafts Environmental Impact Assessment
 - Commercial provides input on commercial terms, market/supply and demand/support for project
 - Engineering provides design and construction details
- **Application is reviewed for completeness, consistency and accuracy**
- **Management sign-off**

Alberta Clipper



- **Public and Aboriginal Consultation kicked off in August 2006**
 - 2 years prior to planned start of construction
- **Environmental, land, engineering and regulatory work begins**
 - Included PIP, pre-application meeting with NEB, environmental survey work over fall and winter 2006 and spring 2007, and lands/routing work
- **Target filing date of April 2007**

Stage 3 - Design and Procurement



- Regulatory, environmental, contracting and procurement and land acquisition plans completed
- Public and Aboriginal consultation plans ongoing
- Regulatory submissions submitted and approved
- Design review and scoping document completed
- Construction packages finalized and major contracts awarded

Pipe Design



- **Safety**
- **Environmental impact minimization**
- **Traditional and local knowledge**
- **River/water crossings**
- **Diameter and pressure optimization**
- **Volume**
- **Material selection**
- **Internal and external forces**

System Design



- **Receipt volumes and locations**
- **Routing alternatives**
- **Delivery volumes and locations**
- **Quality**
- **Contractual obligations**
- **Reliability**
- **Expandability and timing**

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- **Application filed in May 2007**
- **Hearing in November 2007**
- **Approval in February 2008**
- **GIC in May 2008**
- **Construction target – August 1, 2008**

Stage 4 – Construction



- **Construction and fabrication completed**
- **Close out and Start up plans completed**

■ Construction may commence:

- After receipt of Order or Certificate is issued by NEB post GIC approval.
- Where no landowner objects
 - Detailed route hearings can add months to a construction schedule
- Complied with all conditions in the order
 - Ex: filing of construction plan 60 days prior to commencement of construction

Construction - Key Factors



- **Safety**
- **Efficiency**
- **Environmental preservation and restoration**
- **Logistics**
- **Manpower**
- **Community benefits/impacts**

Stage 5 – Start Up



- **Commissioning activities monitored, reported and finalized**
- **Close out plan executed**
- **Start up plan executed**

Operations



- **System operations includes remote operation, real time monitoring, customer relations, and SCADA**
- **Pipe and facility operations include community relations, integrity management, cathodic protection, safety and environmental management systems, and emergency response**