

# South Area Transmission Requirements & Milestones

Stakeholder Session

September 24, 2009

Reliable **Power**

Reliable **Markets**

Reliable **People**



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# South Area Transmission Reinforcement (SATR) Update



- Need filed with AUC on December 30, 2008
- Hearing late June 2009
  - Review of Need
  - Discussion on milestones for stages of development and planned consultation to confirm details / process by year end.
- Ruling issued on September 8, 2009
  - Decision 2009-126 and Approval U2009-340
  - Need approved
  - Requirement to refile an amended Appendix A outlining milestones and process for monitoring by December 31, 2009

# Session Agenda



- Discuss Milestones for South Area Transmission Reinforcement (SATR)
  - Use of milestones to trigger action
  - Choice of milestones
  - Monitoring and Reporting Process
  - Next Steps
    - Input at this session
    - Paper to follow
    - Input on the paper
    - Filing of milestones by year end.

# Defining Need



The ISO must forecast the needs of Alberta and develop plans for the transmission system to provide efficient, reliable and non-discriminatory system access service and expansions and enhancements.  
(EUA S33)

- **AESO Obligations**

- Legislative framework is clear that AESO is to be proactive in its planning and development of transmission. (EUA S16, TDP, TReg (S6, 8, 15), PES)

- **Defining “Need”**

- The AESO must be reasonably certain of need as determined based on forecast (EUA S33, TReg S8)
- As noted in the SATR ruling, the Need was confirmed based on forecast, interest and studies. These factors collectively “indicate that the existing capacity of the transmission system in southern Alberta is insufficient to provide adequate system access services...”
- Staged development and Milestones are used per S11(4) to ensure AESO is “... reasonably certain that a transmission facility is needed in the future.”

# Determining Need

## System Evaluation

Forecasts

Customer  
Interests

Studies

NID  
filed

NID  
approval

Facility  
Application

Equipment

Construction

- The AESO evaluates the system conditions and determines “need” for transmission
- The need is based on forecasts of generation and load conditions, customer interests, and system studies identifying congestion, constraints and any other system contingencies.

# Project Need – multiple stages

## System Evaluation

Forecasts

Customer Interests

Studies

NID  
filed

NID  
approval

Facility  
Application

Equipment

Construction

Stage 1 – 1200 MW

Stage 2 – 1000 MW

Stage 3 – 500 MW

- In the case of the South Wind application, a multi staged project was defined subject to an ongoing assessment and verification of need.

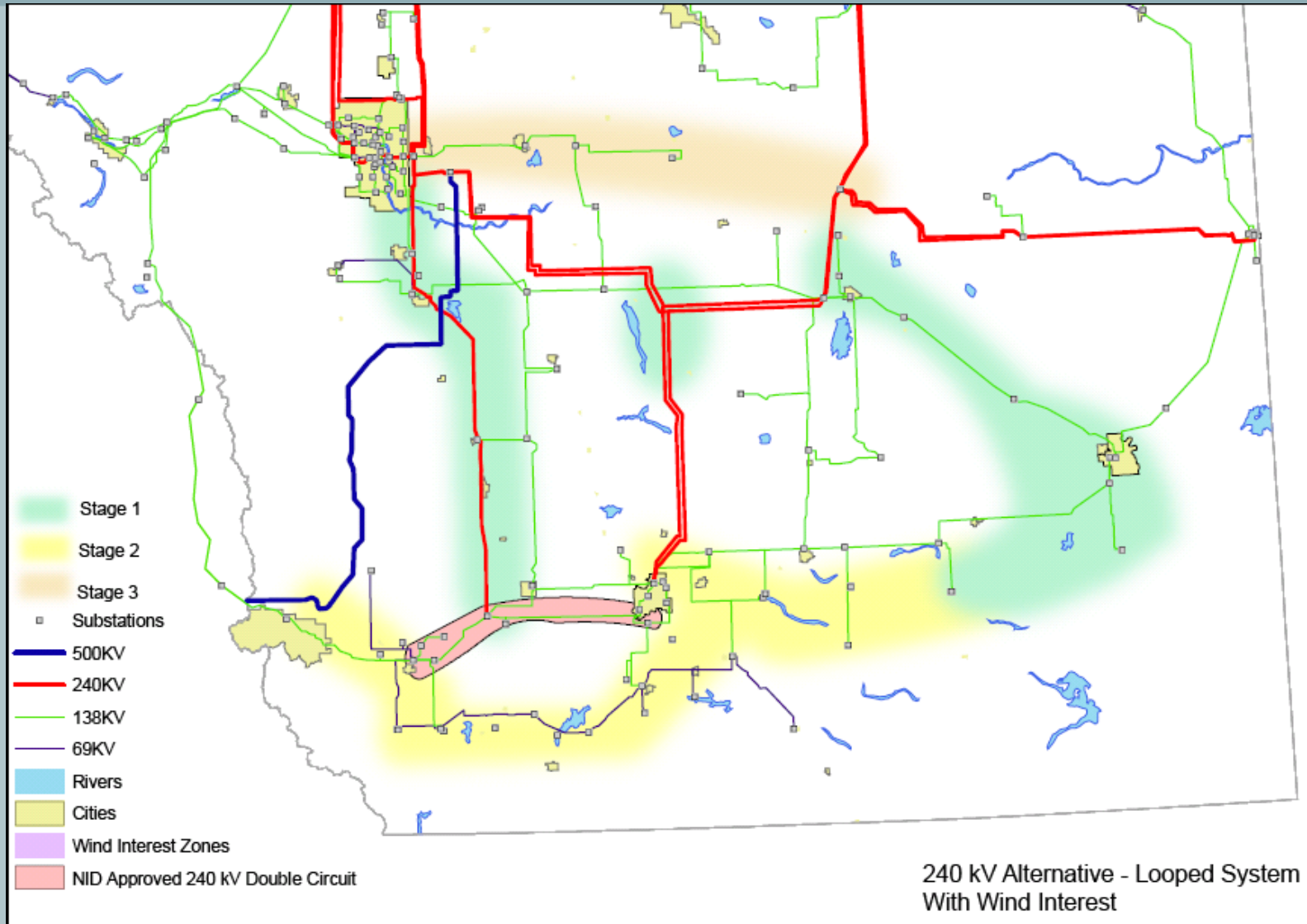
# Defining Need for SATR



- The AESO must be reasonably certain of need as determined based on forecast (EUA S33, TReg S8)
- NID Input:
  - Interest of 8,000 MW wind in South
  - Forecast range of 1,200 to 2,700 MW in next ten years
  - Current system has 500 MW
- SATR Stages:
  - Stage 1 development to add capacity of 1200 MW
  - Stage 2 development for additional 1000 MW
  - Stage 3 development for additional 500 MW
- Milestones to be used to continue to assess and confirm “need”



# SATR Stages



# Use of Milestones



When the ISO's preferred option is to construct a transmission facility at a future date, the ISO must "be reasonably certain that, in the future, a transmission facility is needed, and for the purpose of determining the certainty of the need, the ISO may specify milestones..." (TReg S11(4)(a))

# Milestones – Defined



- Development Milestone
  - Triggers directive to TFO to commence work on facility application
- Construction Milestone
  - If milestone confirms need, triggers progress on construction
  - If milestone does not confirm need, will trigger delay in construction

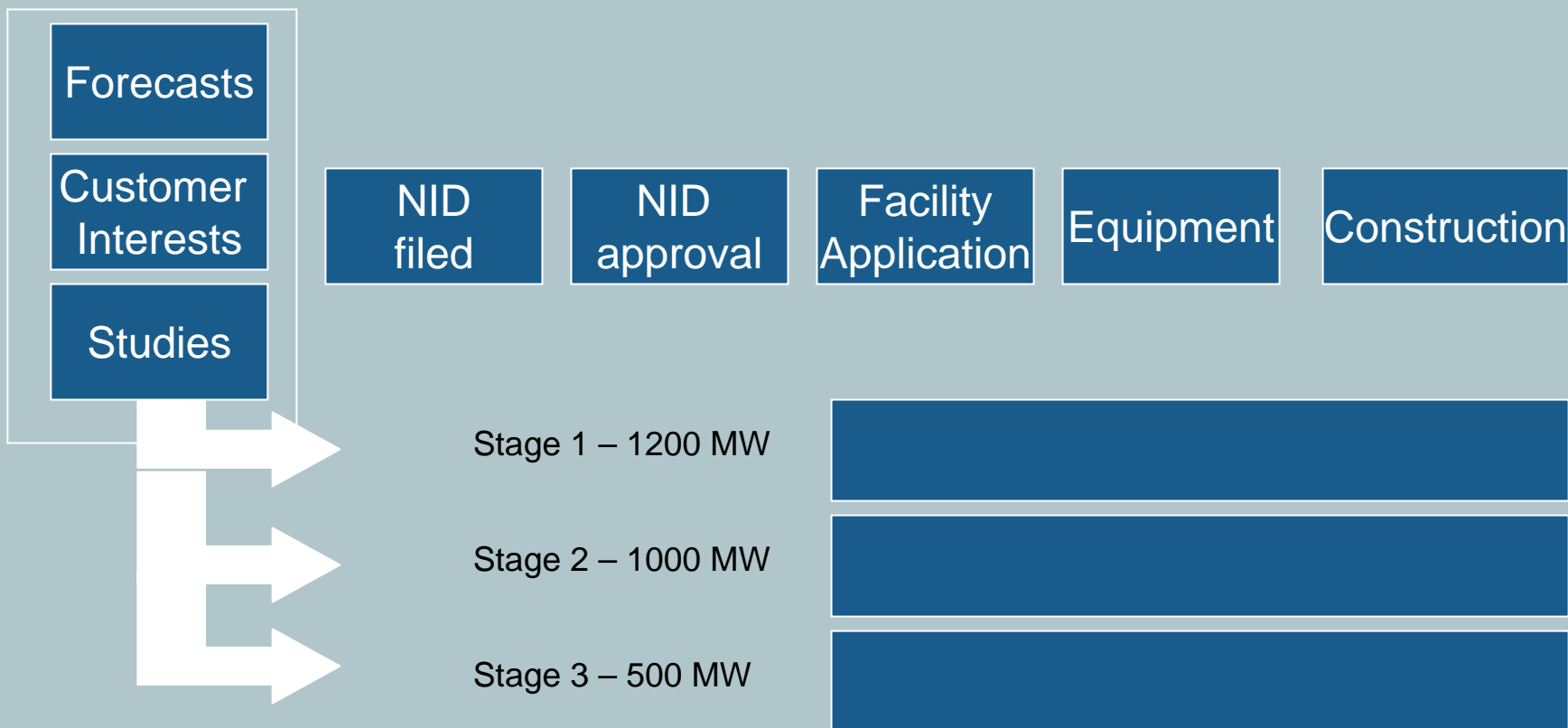
# Milestones – Learning thus far



- Original Table 7.2-1
  - Identified some measures, but unclear as to what was “triggered” following those measures
- Draft Appendix A
  - Established development and construction milestones, but the proposed milestones are now viewed as too limiting in meeting AESO obligations
  - Review Milestones now considered redundant
- Guiding Principles going forward
  - Clarity around measure and what is triggered
  - Used to reassess “need”
  - Allow time for triggered action to proceed

# Project Need – multiple phases

## System Evaluation



- The multiple stages allows for repeated assessment of the system evaluations as a form of “milestones” to continue with or cease construction.

# Choice of Milestones



“... for the purpose of determining the certainty of the need, the ISO may specify milestones including ... ” (TReg S11(4)(a))

# SATR Milestones



- The milestones should:
  - Be useful in reassessing the Need
  - Be transparent
  - Be measurable
  - Allow sufficient time for implementation
- The Need was determined by use of:
  - System Forecasts
  - Customer interconnection interest
  - System Studies

# Development Milestones



- Used to assess the need as defined in the NID
  - Assessment based on forecasts
  - Assessment of timing / need for commencement of facility application work
  - Performed periodically



# Construction Milestones



- Verification of need and trigger for construction:
  - “off ramp” if in stage 1 – construction will proceed unless the measured milestone is not met / need is not verified
  - “construction” – construction will proceed as long as measured milestone or check point is met.
  - Reviewed when Facilities Application approved

# SATR Milestones



- Proposed SATR Milestones to measure forecast, interest, and system studies establishing MW levels (not application levels).
- Timing is a consideration for both development and construction to ensure that transmission is in place to meet generation timeline.
- Forecasts: test generation scenario assumptions verified against annual wind additions, progress on wind projects, GHG policy development, economics of wind generation, and other parameters
- Wind Interest: assessed against applications for interconnection, stage in interconnection proposal
- Studies: ongoing assessment of system impacts based on forecasts. It should be noted that even though a milestone may be based on MW forecast levels, system studies that determine congestion will trigger a reassessment of need and trigger action.

# Project Need – Development and Construction Milestones

## System Evaluation

Forecasts

Customer Interests

Studies

NID  
filed

NID  
approval

Facility  
Application

Equipment

Construction

Stage 1 – 1200 MW

Stage 2 – 1000 MW

Stage 3 – 500 MW

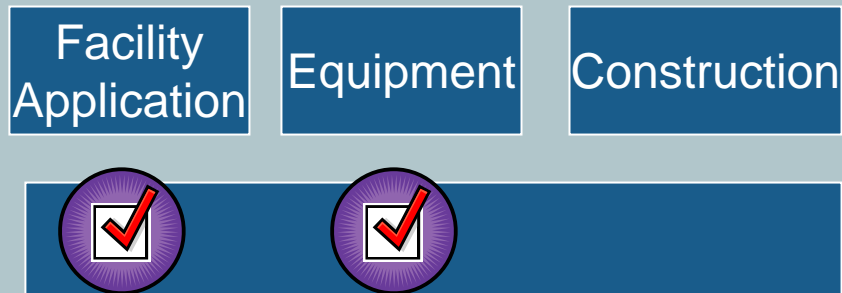
- Throughout the project, the AESO will direct TFOs to commence work on facility applications and proceed with construction subject to these assessments.

# Stage 1 Development Milestones

## Stage 1:

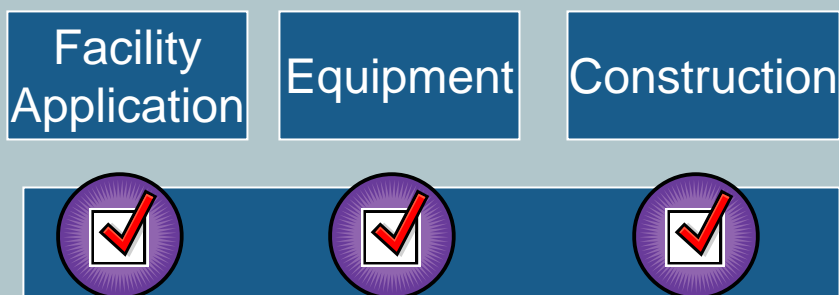
The ISO has directed the TFO to commence work on the facilities applications.

Expect no change to forecast for system need, so construction will commence as scheduled to meet forecast, wind interest and address system studies / constraints.



# Stage 1 Construction Milestones

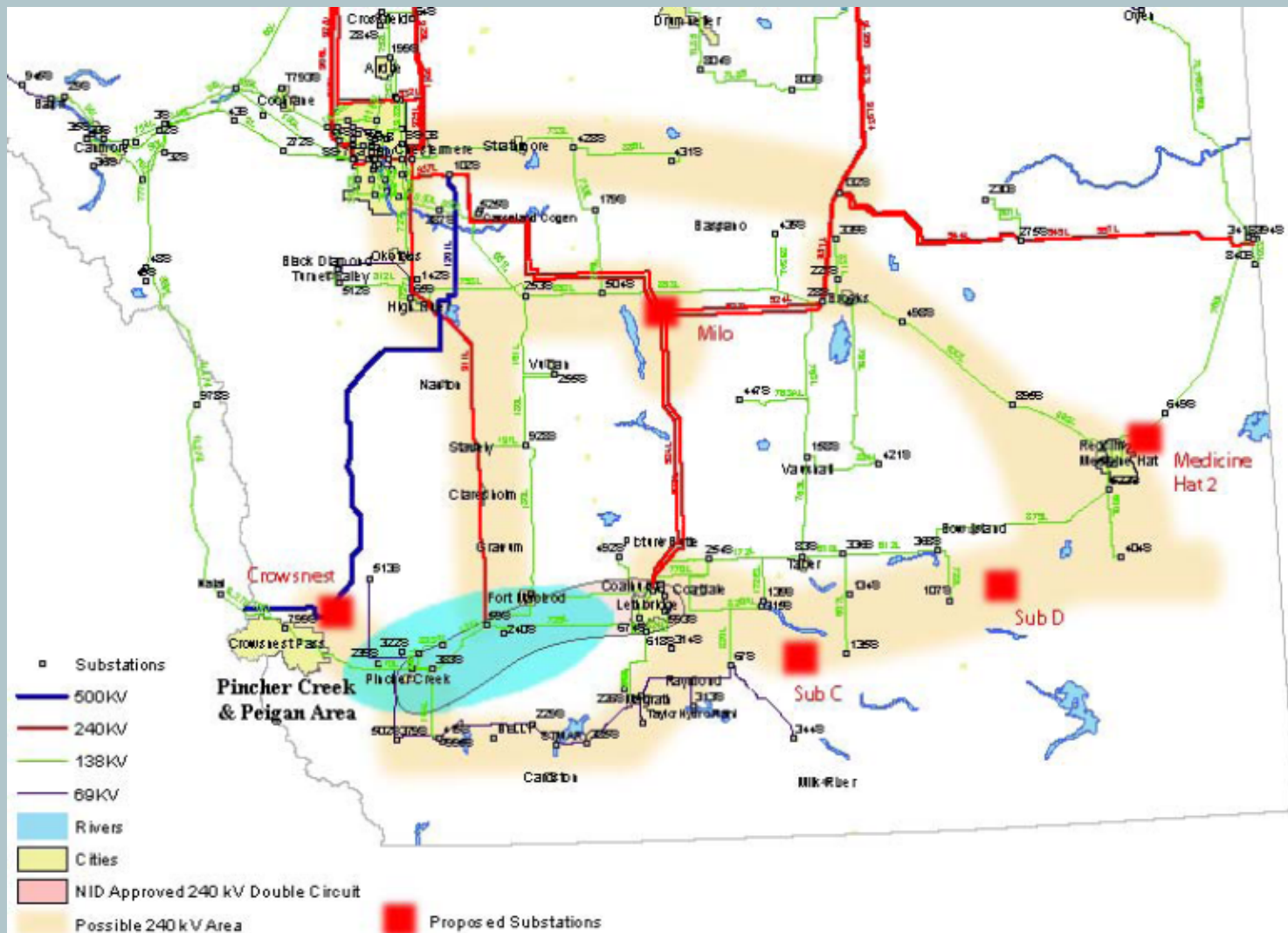
**Construction Milestone: Looking for changes in wind interconnection queue**



<b>Construction Elements</b>	<b>Off Ramps</b>
Peigan – South Calgary 240 kV line	Less than 500 MW of wind development SW
W Brooks – Sub D 240 kV line	No wind development in the SE

- **Note that the Coleman and Milo facilities have been triggered as system requirements**

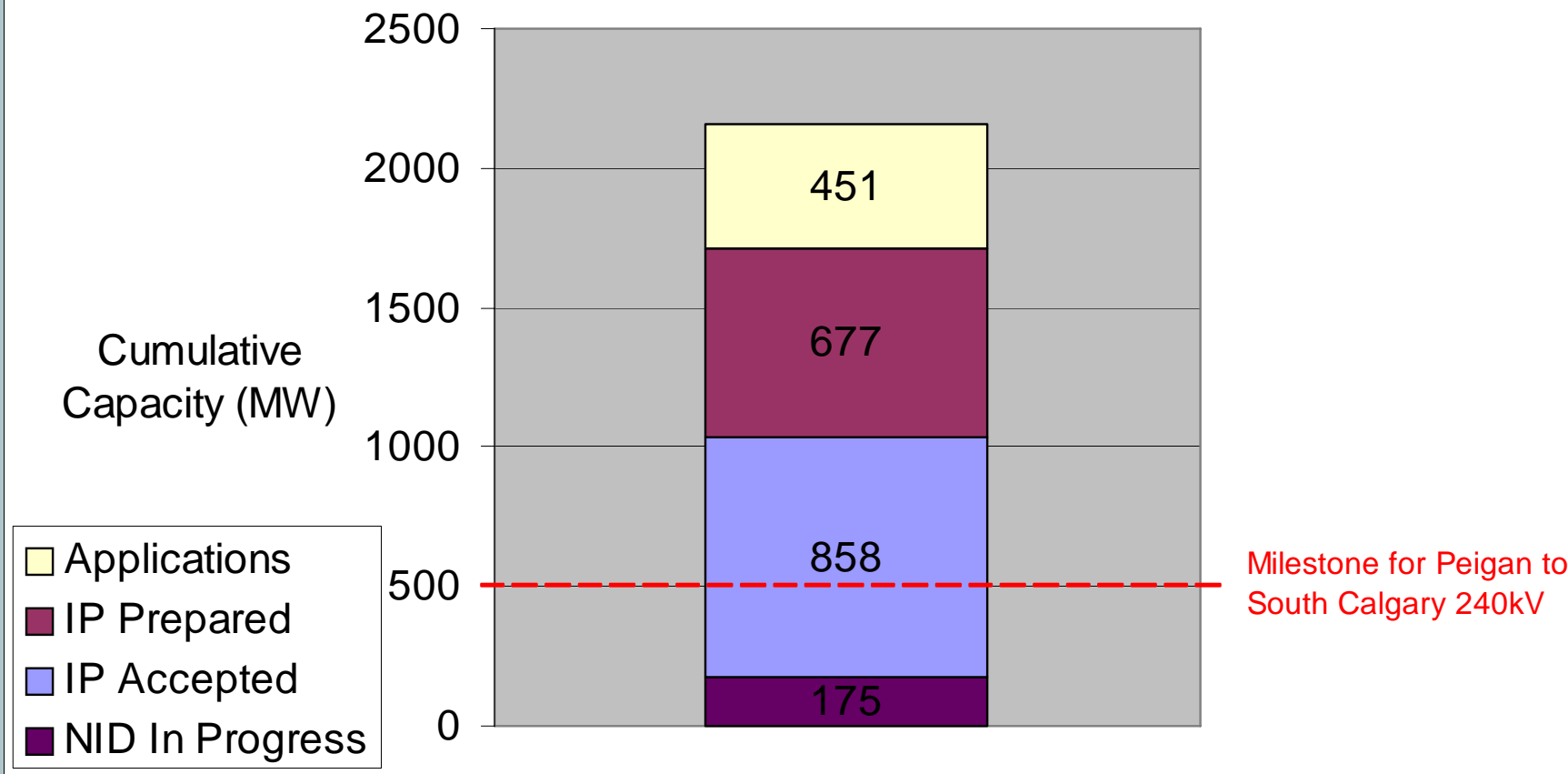
# Stage 1 Example



# Stage 1 Example

## Stage 1 SW Construction Milestone

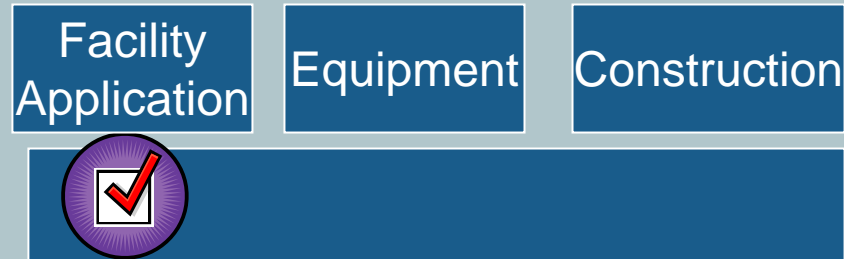
Pincher Creek & Peigan Wind Projects Status Update



# Stage 2 – Development Milestones

**Development Milestone: Looking for changes in forecast, interest, studies**

Stage 2 – +1000 MW





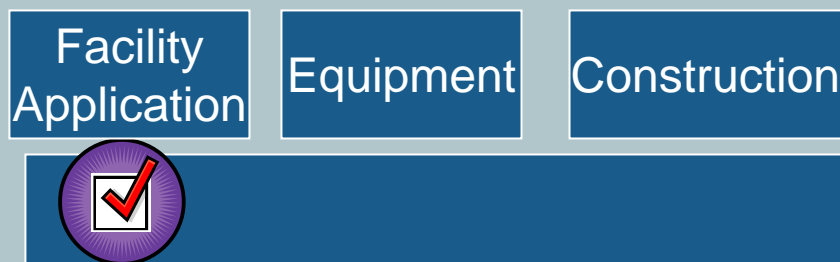
# Stage 2 – Development Milestones

As new information is measured, used to confirm need forecast. Includes assessment of IPs, MW and location

	SW	SE
Low 1200		
High 2700		

# Stage 2 – Construction Milestones

**Construction Milestone: Looking for changes in wind interconnection queue**



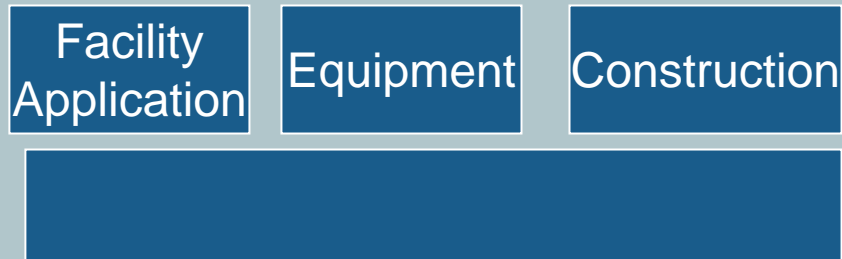
Construction Elements	Triggers
500/240 kV Crowsnest Substation and 240 kV line (SW)	More than 600 MW of wind development near Pincher Creek
Goose Lake – Sub C 240 kV line (SW)	Any generation between Goose Lake and Sub C
Sub D – Sub C – MATL 240 kV line	Any generation between Sub D – Sub C – MATL areas

# Stage 3 Development Milestones



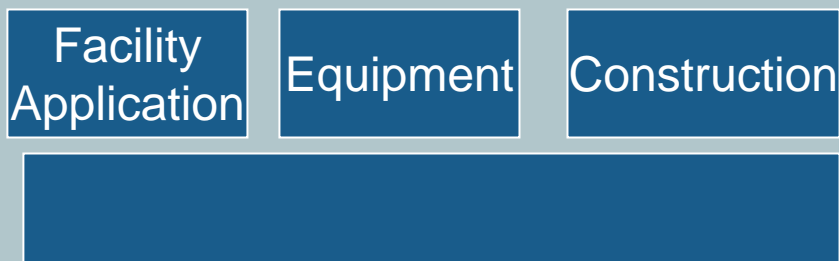
**Development Milestone: Looking for changes in forecast, interest, studies**

Stage 3 – +500 MW



# Stage 3 Construction Milestones

**Construction Milestone: Looking for changes in wind interconnection queue**



<b>Construction Elements</b>	<b>Off Ramps</b>
Ware Jn – Langdon 240 kV line	System studies showing overload in SE

# Monitoring & Reporting on Milestones



The ISO must “identify the process by which the ISO will monitor and determine whether the milestones identified ... are met.” (TReg S11(4)(b))

# Monitoring and Reporting



- A development milestone that triggers a TFO directive / facility application is communicated [how]
- Regular load and generation forecast information is made public by posting to the ISO website
  - The ISO will also compare this information to SATR milestone and report on such related to construction triggers
  - Changes to the interconnection queue are public and any assessment of such that impacts the ISO's forecast are noted above
- A construction milestone is considered to be proceeding unless there is a change to the interconnection proposals
  - Any change of anticipated interconnections will lead to construction timing being changed

# Next Steps



The ISO commits to consult on these milestones and file an amendment to Appendix A by year end.

# Next Steps

Today	Feedback at this session
September 30	Draft recommendations to stakeholders
October 15	Written feedback from stakeholders
October 30	Post comments
November 15	Finalize Recommendations
December 15	File amended Appendix A



# Questions & Contact Information



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