

# **Alberta's Industrial Heartland Corridors for Linear Infrastructure Stakeholders Infrastructure Priorities**



## **Priorities and Recommendations**

### **Workshop Report**

**July 24, 2007**

#### **Context**

The Government of Alberta has established a Capital Region Integrated Growth Management Planning process to advise on long-term infrastructure needs for the greater Edmonton region. Within this region, the Alberta Industrial Heartland (AIH) will be the major focus of growth over the next 20+ years due to the significant level of investment being announced in upgrading and service facilities. Input from the Industrial Heartland's Linear Infrastructure Corridor group is important to ensure that Capital Region plans fully recognize and accommodate the future needs associated with heavy industrial development within the Alberta Industrial Heartland (AIH) area.

A one-day workshop was convened to identify development priorities and provide recommendations for the Capital Region Planning process. Government and Industry representatives participated in break-out discussions focused on future priorities for: 1) Road and Rail; 2) Pipelines; and 3) Water, Electricity, Communications et al.

The following provides a summary of the workshop objectives, specific recommendations and accompanying rationale from the workshop discussions:

## Objectives

- To identify recommendations for the orderly development of linear infrastructure in the long term as input to the Capital Region Integrated Growth Management Planning process
- To build shared understanding and move toward consensus within the Industrial Heartlands Corridor group
- To place all of these in the context of: 1) individual sites; 2) the Heartland and the Capital Region; and 3) the Province (including tie-ins to Fort McMurray)

## Road and Rail

### Funding Formula

**Recommendation:** The Province should negotiate a funding formula for the required municipal roadway infrastructure in and around the AIH. This formula may include funding from some or all of the federal, provincial, and local governments as well as local industry.

**Rationale:** As the local governments prepare their transportation and land use plans it has become evident to them that they will not have the tax revenue or borrowing authorities necessary to pay for road infrastructure required in the relatively short time-frame needed to support the current round of developments in the Heartland. While the expected investments will yield considerable revenues in the long-term, the near future is of concern if projects are to be constructed on time. The "Roads to Resources" funding model may a relevant comparator. For its part, industry needs these roadways soon and could assist the government in supporting a portion of the infrastructure costs perhaps with some form of recovery later on from future property and business taxes.

### Enforceable Land Use Plan

**Recommendation:** The province should develop a directly enforceable Land Use Plan for the AIH that recognizes the need for linear infrastructure corridors and additional areas to support continued development. This would build on the county and regional plans currently under development, taking into account the expected industrial growth.

**Rationale:** The AIH municipalities have developed complementary land use plans. Under recent pressures to accommodate more development, collaborative efforts to link these plans together and address inconsistencies or conflicts have fallen short of expectations. Equally over time local governments may well succumb to the urging of industrial developers to amend the local plans in ways that could compromise the success of the region as a whole. Without an effective, integrated land use

plan for the AIH, the resulting risks and uncertainty may curtail infrastructure and industrial investments.

### **'Realistic' Transportation Plan**

**Recommendation:** The Province should prepare, on a priority basis, an integrated long-term transportation plan with appropriate phasing that builds on the regional land use plan and is based on realistic traffic projections.

**Rationale:** All the members of the AIH are at different points of development in their transportation planning yet the region and the industrial projects need these plans to be integrated and implemented now. Also, many are concerned with the inadequate provincial norms that require construction traffic not be included in assessing road loads. The AIH is unique in several ways. For example, construction is expected to last more than 20 years, the upgraders and potential refineries are each going to require maintenance turnarounds every three years which then results in several turnarounds each year due to the number of projects being proposed for the area. Truck traffic is also going to be a much higher proportion of the traffic than elsewhere in the Edmonton region. Safety and efficiency will be compromised if the planning is unrealistically low or is based on only local plans. Finally, plans are not going to be easily implemented unless the public, through good communications efforts, is consulted.

### **Commuting Action Plan**

**Recommendation:** Industry as well as local and provincial governments need to work together to prepare a commuting action plan for the AIH, taking into account planned road and rail infrastructure.

**Rationale:** It is not evident, particularly while construction is ongoing, that private cars are the optimal means for workers to get to their AIH plant sites. Short-term options might include company organized bus services, or regional service organized by the municipalities. Either would require parking lots at various collection points. Longer term, the options of all types of transit service' including commuter rail (heavy rail or LRT) , Bus Rapid Transit, regular bus, shuttle bus etc. might be practicable. Effective commuter solutions would do much to reduce the pressure on the road infrastructure in the region.

## Fort Saskatchewan Area Traffic Routing

**Recommendation:** The Provincial Highway Network should be upgraded to allow for efficient traffic movement in the Fort Saskatchewan area including the consideration of building bypasses of Fort Saskatchewan and alternatives for upgrading the connectivity of the regional primary and secondary highways as soon as possible. This traffic routing should allow for heavy/high load movements destined to AIH or Cold Lake/Fort McMurray and should integrate with the Alberta Capital Region Transportation Master Plan's Outer Ring Road (*Insert map*)

**Rationale:** Efficient movement of traffic through and around Fort Saskatchewan is essential for effective execution of industrial projects and quality of life for local citizens. Fort Saskatchewan is already a bottleneck for vehicles attempting to access construction sites in the region. This is expected to escalate exponentially unless bypass roadways are built. Currently industrial and commuter traffic from the south (Hwy 21) and from the west (Hwy 15, Hwy 37) destined to industries in Fort Saskatchewan and Strathcona County converge on Fort Saskatchewan, mixing with residential and commercial traffic, resulting in congestion and impacts to the safety and quality of life of local citizens. The City has recently determined it is necessary to implement additional traffic control measures to reduce impacts on local residents.

The above situation will be exacerbated with future upgrader development and industrial service developments in the AIH region.

## Provincial Highway Intersection Upgrades

**Recommendation:** An AIH ring road network is designated by the province as a provincial highway priority and efficient traffic flow patterns are established through intersection upgrades, route designation, lane separation and signage.

1. Ring Road to include current road segments as follows:
  - a. Secondary Hwy 825 from intersection with Hwys. 15 and 37 north to Twp Rd 570.
  - b. Twp Rd 570 east to Hwy 38.
  - c. Hwy 38 from intersection of 643 & 570 east to intersection with Secondary Hwy 830 and subsequently to Secondary Hwy 831.
  - d. Secondary Hwy 830 (831) south to intersection with Hwy 15.
  - e. Hwy 15 west back to intersection with Hwys. 37 and 825.
2. Range. Rd. 224 (Opal Road) and Twp. Rd. 570 in Sturgeon County be designated as a secondary hwy. as part of the ring road (#1)
3. Intersection improvement at Hwy 15/ Range Rd 214 including grade separation in Strathcona County.

4. Interchange development at intersection of Hwy 15, Hwy 37 and Secondary Hwy 825 in Sturgeon County.
5. Intersection improvement at Hwy 15 and Hwy 21 in Fort Saskatchewan.
6. Bridge improvements or additions need to be studied to address increasing traffic flows and the high/heavy load needs and timing of Fort Saskatchewan western bypass route and bridge construction. Options include:
  - a. Hwy 15 bridge in Fort Saskatchewan and
  - b. Vinca Bridge (Hwy 38),
  - c. Potential new bridge between Fort Saskatchewan and Vinca
  - d. The Henday NE crossing of the North Saskatchewan River

### **Rationale:**

A ring road system of consistent standard around AIH will establish efficient access to industrial developments while encouraging the separation of local traffic from commuter and industrial traffic.

### **Integrating Transportation Requirements in AIH with other Oil Sands Producing Regions**

**Recommendation:** The Alberta Government, through the Department of Infrastructure and Transportation lead a study to assess the inter-relationship, integration and associated benefits of:

1. The interface of transportation corridors to oil sands producing areas (Fort McMurray and Cold Lake) with potential AIH corridors (28A/28/and 63 corridor; 21/15/831 corridor)
2. Completion of northeast leg of Anthony Henday ring road. (i.e. could serve as a short term western bypass of Fort Saskatchewan and built to accommodate high/heavy loads destined for AIH and Fort McMurray/ Cold Lake.

**Rationale:** Provincial and Capital Region transportation initiatives and priorities have the potential to significantly affect traffic flows in and around the AIH region. These initiatives should be complementary to transportation requirements of oil sands developments in the Wood Buffalo and Cold Lake regions.

## **Pipelines**

### **Mandate Major Corridors for New Pipelines**

**Recommendation:** The provincial government should acquire and own corridors up to one kilometre in width within and adjacent to the currently defined AIH region for the purpose of situating new pipelines required to transport products to and from industrial facilities. Companies would be

required to utilize the corridors as the default routing for new pipeline developments.

The government would make the upfront investment in the land required for the corridors and recoup the investment from companies as they receive the applicable approvals from regulators and municipalities for pipeline rights of way within the designated corridors; i.e., a long-term cost-recovery model. For mandated corridors to succeed, the government would have to ensure that there are no gaps and/or pinch points along the corridor routes. Establishing complete corridors throughout the AIH region would likely require the government to expropriate land from some of the private landowners along the planned routes. Embarking down such a path may require strong political will and extensive public relations.

Needed are at least three 'backbone' corridors within the currently defined AIH region (one corridor on each side of the North Saskatchewan River and one east-west corridor that crosses the river) along with a 'ring' corridor around the region. The backbone corridors would serve as the primary access routes for connecting pipelines to major bitumen upgraders, oil refineries, petrochemical facilities, etc. An important priority is for the government to purchase a wide strip of land between Highways 15 and 21 (northeast 'penetrator' to Fort Saskatchewan). The ring corridor would be intended to provide sufficient land for locating pipelines (as well as other linear infrastructure) for the next several decades as the AIH region continues to develop and potentially extend its geographic reach.

The determination of the specific location of the corridors should be based on the Priority Principles/Criteria developed by the Technical Working Group on September 22, 2006. In particular, corridors should take into consideration existing facilities/corridors, land use/ownership impact, land fragmentation avoidance, economics/cost, timing/scheduling/planning, safety/risk/environmental and stakeholder buy-in. To the extent possible, corridor routes should follow site boundaries and section lines and appropriate development set-backs should be established immediately adjacent to the corridors.

**Rationale:** In order for the AIH region to achieve its full potential, new industrial facilities will require a large number of new and expanded pipelines to transport products in and out of the region. Some locations within the AIH region are quickly becoming inaccessible to new pipelines due to the existence of multiple pipelines and some private landowners possessing disproportionately high negotiating leverage.

Companies contemplating new industrial facilities require a high degree of certainty regarding the approval of pipelines and the commercial terms of those pipelines. Earmarking land for clusters of pipeline rights of way would give companies the necessary assurance of access for the pipelines needed for their facilities. There would be a cost associated with companies being

forced to follow corridors that do not necessarily take a direct route to their proposed facilities, but the cost of installing additional pipe would be easily outweighed by the commercial and timing certainty resulting from the establishment of corridors.

If corridors for pipeline rights of way are not established in the near term, the industrial development of the AIH region may soon be prematurely restricted. Already a proliferation of pipeline rights of way in a non-consolidated manner is limiting options and increasing costs to build new industrial facilities. Though establishing corridors would be difficult and controversial, such an initiative is only possible at the present time while the constraints are not too severe. The window of opportunity may close over the next two years.

### **Decision-Making Criteria**

**Recommendation:** Utilize definitive decision-making criteria for locating pipeline rights of way where corridors do not exist

**Rationale:** The aforementioned corridors would not address every situation where pipelines are needed for new industrial facilities. New facilities will undoubtedly be planned for locations some distance from designated corridors. For the portions of the pipeline rights of way outside of the designated corridors, the proponents would be required to apply the Priority Principles/Criteria developed at the September 22, 2006 Linear Infrastructure Corridor Workshop.

It would be impossible to capture all of the future pipeline right of way needs for the AIH region in the corridor concept; thus there is a need for having an approach to deal with extenuating circumstances.

### **Consolidated Pipelines Plan**

**Recommendation:** The Alberta Government should formulate a consolidated pipelines plan for the AIH region. The Alberta Energy and Utilities Board (AEUB) should enforce the plan by ensuring future major pipeline routings adhere to defined corridors.

**Rationale:** The AEUB currently reviews applications for new and expanded pipelines within Alberta on a case-by-case basis. Assuming the provincial government accepts the above-mentioned recommendation to designate one-kilometre wide corridors for locating pipeline rights of way, the AEUB should have lead responsibility for ensuring that companies adhere to the overall linear infrastructure development framework.

In short, the AEUB would enforce an anti-pipeline right of way proliferation directive. Companies proposing pipelines within and adjacent to the region would be required to stipulate how they plan to utilize the designated

corridors. Any deviations from the corridors would have to be justified by the companies and authorized by the AEUB.

Creating major corridors for locating pipelines and other linear infrastructure would not fully serve the purpose of optimizing industrial development if companies are not required to utilize the corridors. The AEUB is the logical body to review the manner in which proposed pipelines adhere to the corridor concept.

### **Conditional Permitting**

**Recommendation:** Ensure that municipal development permits are conditional on satisfying the consolidated pipelines plan.

To receive regulatory approvals, proponents of heavy industrial facilities and associated pipelines would be required to explain in detail how the proposed system would fit within the overall linear infrastructure development framework; especially how the companies plan to utilize the designated corridors. Municipal development permits would be issued conditional on satisfying the requirements of the consolidated pipelines plan for the AIH region.

**Rationale:** Companies currently plan out the specifics of all linear infrastructure, including pipelines, prior to financially committing to new industrial facilities. However, specific linear infrastructure plans are not required to be part of the regulatory application for the industrial facility. Requiring coverage of the linear infrastructure plan would force companies to embrace the corridor concept.

### **Long-Term Pipeline Forecast**

**Recommendation:** Develop a long-term pipeline forecast for the movement of Alberta's oil sands products into, out of and within the AIH region.

Resources need to be dedicated to assess and project the pipelines and the pipeline capacity necessary to accommodate the long-term development of the AIH region.

Independent consultants should be engaged to: i) identify the planned and prospective industrial facilities in and around the AIH region, ii) solicit information from each company operating within or contemplating operations within the region regarding requirements for product and service utility pipelines, iii) develop a long-term forecast (25-year planning horizon) of the type, number, magnitude and location of pipelines in the vicinity of the AIH region, and iv) propose the specific locations of the corridors within and adjacent to the region.



Due to the uncertainty associated with the development of specific industrial facilities, the independent consultants should work with the companies and other stakeholders to articulate various scenarios for the evolution of the region's pipeline infrastructure. Such an exercise would assist in defining corridors that are flexible enough to accommodate changes in the business environment.

**Rationale:** To act on the first recommendation, the provincial government will require an in-depth analysis of the AIH pipeline needs.

## **Water, Electricity et al**

### **Water Allocation**

**Recommendation:** The Government should urgently resolve how the water of the North Saskatchewan River will be allocated to ensure orderly development of the AIH region.

**Rationale:** There is an urgent need to define water needs and clarify the limits of water withdrawal across all users. This would include consideration of and support for maximum recycling of water in processing, identifying water use needs (e.g., through cooling and evaporation), minimizing the number of intake points and developing (interim) guidelines for water allocation and use. Action is needed to ensure efficient and orderly development of water infrastructure. First, how much water is available for future development? Second, what guidelines should be put in place to ensure efficient long-term development that is equitable to existing and future development. Uncertainty about access to water resources could have a significant impact on the rate and extent of development of the AIH region.

### **Funding Future Water Capacity**

**Recommendation:** The Government should establish a risk-sharing framework to fund water capacity in a staged approach.

**Rationale:** There is a need to build water infrastructure to a sufficient capacity to meet projected needs in the longer term. This would involve a staged approach to investment to stay ahead of demand. This front-end building of capacity involves financial risk. For example, building a common intake pipe significantly larger than current needs allows for additional users to utilize that pipe in the future. The added cost of building for future capacity requires greater investment and hence risk in the up-front expenditures. Who should bear those costs? Is a risk-sharing framework needed to encourage forward looking capacity additions in water infrastructure? The lack of timely water infrastructure could preclude

upgrader development and encourage more unprocessed hydrocarbon exports to the US.

### **Zero Liquid Discharge**

**Recommendation:** The Government should establish guidelines to move toward zero liquid discharge in the AIH area.

**Rationale:** To ensure efficiency and minimize environmental impacts, the government should encourage all companies to move toward zero discharge of process water and other liquids from operations. (This does not include sanitary water which is minor in comparison to process needs). This would include grandfathering considerations for existing operations. The intent of this directive would be to encourage maximum recycling of process water in the industrial area and reduce the need for physical access to the river for discharging waste water.

### **Transmission Infrastructure Impacts on Development**

**Recommendation:** The Government should be aware of and understand the implications for development if transmission capacity into the AIH is not developed in a timely manner and to undertake public communications to ensure the benefits of development and growth in the region for all Albertans are understood.

**Rationale:** Current plans anticipate the establishment of corridors and transmission capacity from Wabamun to the AIH via routes north and south of Edmonton by 2010. Two routes increase the reliability of supply. Public opposition to the corridor right-of-way routes and / or the transmission facilities could delay the establishment of high voltage transmission lines by several years. Through the consultation process, information is shared with the public on the plans in order to achieve acceptance without political intervention. However, expropriation may be required if project delays result in significant impacts on development in the region. Current capacity in the AIH region supports only one upgrader facility. Faced with uncertainty with respect to adequate and reliable power, upgraders would be forced to find alternative electricity capacity. Most likely these facilities would invest in gas-fired co-generation facilities raising gas demands in the region (with more pipeline requirements) and adding to air shed load while (likely) being less efficient and reliable in terms of electricity generation.

### **Cumulative Effects**

**Recommendation:** The Government should develop, regularly update and share projections of long-term needs across a range of areas as a basis for managing cumulative effects.

**Rationale:** The sequential nature of applications for new developments means that optimal solutions are difficult to identify and implement. Water permits, for example, are allocated one at a time without understanding of total requirements over the long term. This increases the chance of inefficient and unsustainable allocations, gives a competitive advantage to early developments and discourages cooperation for reassignment of unused allocations. The challenge of sequential licensing and managing cumulative effects cut across a number of areas (see 'Consolidated Pipelines Plan recommendation'). A common approach including initially the accumulation of information, development of long-term projections and sharing of information – cumulative information – is required.

### **Skills and Labour Shortages**

**Recommendation:** The Government should be aware and understand the potential impacts of skill and labour shortages on the short and long-term development of the AIH region and as an engine of economic growth in the province.

**Rationale:** Shortage of skilled and professional labour could significantly slow growth in the AIH region. Current efforts by government to expand education opportunities across key professions and trades are important and more should be undertaken. As well, efforts to increase immigration including reducing barriers to entry and accreditation are valuable. Lack of labour will not only affect the pace of development but has economic impacts for the province as companies will shift manufacturing and services offshore. Further, lack of human resources in municipal and provincial governments slows permitting, planning and the regulatory process in general.

There is an opportunity for the government to work cooperatively with industry in the AIH region to create programs, apprenticeship commitments, and increase the overall supply of skilled workers in the area. Industry encourages the government to persevere in its efforts to resolve this issue for the province and the region.