

## ***Executive Summary***

CastleGlenn Consultants Inc. was retained by Lacombe County to undertake a Traffic Impact Assessment of the *Lacombe/Blackfalds Area Structure Plan* [Armin A. Preiksaitis & Associates Ltd. (May, 2004)].

The purpose of the assessment was to:

- provide Lacombe County with a strategic plan that would address future infrastructure required to accommodate new residential/industrial growth within the Lacombe/Blackfalds area;
- confirm the county roadway network required to accommodate the full impact of build-out envisioned within the *Lacombe/Blackfalds Area Structure Plan*;
- identifying the roadway/intersection improvements required to sustain the forecast traffic growth and to achieve efficient traffic operations throughout the network; and
- determine the necessary proponent contributions required to develop the required infrastructure.

The above objectives were intended to enable Lacombe County to develop a position that would assure that the transportation requirements of the area structure plan are sustainable; that the required infrastructure upgrades could be implemented when warranted; and that all beneficiaries are contributing a fair share to the cost of the infrastructure.

### ***Why Has This Assessment Been Initiated?***

Lacombe County anticipates significant growth evidenced by the applications for development approvals on the lands within the study area. The County recognizes a need to develop an efficient, effective and co-ordinated approach that would address the needs of individual development applications and assure a sustainable strategy capable of accommodating the overall development plan for the area.

Over the past 5 years the constituent municipalities and the Provincial Government (Alberta Infrastructure and Transportation) have developed plans that would create new collector roadways and expand the capacity of highways within, and adjacent to, the study area. These long-term roadway plans will result in additional transportation pressures placed upon Lacombe County's roadways. Within the study area numerous upgrades to the local County roadway network will be required.

### ***The Lacombe/Blackfalds Area Structure Plan***

The *Lacombe/Blackfalds Area Structure Plan* encompasses the County lands bordered to the north by Highway 12, to the south by the Blindman River, to the east by Range Road 26-4 and to the west by Highway 2. This area was divided geographically into three sections: the lands

west of C&E Trail and north of Highway 597, the lands east of C&E Trail and north of Highway 597 and the lands south of Highway 597 and north of the Blindman River. This study mainly concentrated on the infrastructure improvements required for the lands located west of C&E Trail and north of Highway 597. Roadways within the urbanized limits of the Towns of Blackfalds and southern portion of the Town of Lacombe were not included within the infrastructure assessment.

The *Lacombe/Blackfalds Area Structure Plan* outlined the residential, industrial, future urban expansion, and recreational land uses planned to develop within the Lacombe/Blackfalds area over the next 25 years. It was determined that approximately 3,260 acres of land is anticipated to be developed through the *Lacombe/Blackfalds Area Structure Plan*. The development plan is anticipated to accommodate approximately 1040 country residential units under a “high” density scenario or 410 country residential units under a “low” density scenario, 5,300 homes in urban expansion areas, 1.4M SF of industrial space and a 100-acre recreational area.

Three development horizon periods were created to provide an understanding of what infrastructure would be required within the next 10 years (Phase I), within the next 10 to 20 years (Phase II) and beyond the 20-year time frame over (Phase III).

### ***How Much Traffic Will the Area Structure Plan Generate?***

Developments outlined in the *Lacombe/Blackfalds Area Structure Plan* are anticipated to generate a total of approximately 14,375 new vehicle trips during the afternoon peak hour of travel demand upon the time of “build-out” (2029):

- The first ten years of development (Phase I) is anticipated to generate approximately 2,720 vehicles-per-hour (vph) during the peak hour of travel demand;
- Within the next decade (Phase II) development is anticipated to generate an additional 900 vph in the peak direction during the peak hour of travel demand; and
- The total development potential associated with the completion or build-out of all lands (Phase III) is anticipated to generate over 10,755 vehicle trips during the afternoon peak hour of travel demand.

### ***Require Infrastructure Improvements***

To sustain the anticipated traffic growth upon the “build-out” of *Lacombe/Blackfalds Area Structure Plan* within the area west of C&E Trail and north of Highway 597 the following infrastructure improvements were determined to be warranted for roadways within the jurisdiction of Lacombe County:

- paving of approximately 20 kilometres of roadway (4.5 km Phase I and 1.7 Phase II);
- construction of approximately 1.7 kilometres of new roadway (gravel based);

- intersection modifications such as acceleration/deceleration lane tapers edge of pavement curve, lengthening of auxiliary, channelization, implementation of a left-turn lanes and traffic signals; and
- twinning of approximately 1 kilometre of roadway.

### ***Infrastructure Improvement Costs***

The total cost to improve the County roadway network system within the area west of the C&E Trail over the 25-year time horizon of the area structure plan was estimated to cost approximately \$14.4M:

- approximately \$11.3M of infrastructure costs is anticipated to be incurred within Phase I;
- approximately \$0.8M in infrastructure improvements is anticipated to be incurred within Phase II of the development program; and
- approximately \$1.6M in improvements are anticipated to be incurred within Phase III.

### ***Off-Site Lot Levy***

As this assessment concentrated on the development proposals, to the greatest extent on the west side of C&E Trail only those costs impacting the west district were carried forward in the determination of lot levies. Lacombe County would be responsible for approximately 66 percent (\$9.5M) of the total (\$14.4M) infrastructure costs required to sustain the anticipated increase in traffic within western district of the Lacombe/Blackfalds area. The remainder of the costs would fall within the jurisdiction of other agencies (AIT, municipalities) and the development community.

Of the \$9.5M in infrastructure costs associated with Lacombe County improvements needed to sustain future growth it was determined that the eligible component of infrastructure costs attributable to off-site lot levies would be approximately \$6.2M.

Five scenarios were developed and analysed to investigate the impacts of how the anticipated infrastructure costs could be recovered through off-site lot levies. The off-site lot levy scenarios indicated that:

- when all developments proposed within the entire study area (including “future urban expansion” lands) are taken into consideration, a residential lot levy of \$2,000/lot and a non-residential levy of \$1.20/SF for the “high” density scenario and a residential lot levy of \$2,050/lot and a non-residential levy of \$1.20/SF for the “low” density scenario is required to recover sufficient funds;
- when “future urban expansion” levy revenue is excluded from the “global” levy calculation, a \$8,950/lot residential levy and \$5.50/SF non-residential levy for the “high” density scenario and a \$13,800/lot residential levy and \$9.00/SF non-residential levy for the “low” density scenario would be required to recover the total \$14M infrastructure costs;

- when levy revenue from development within “future urban expansion” areas and non-residential development is excluded a \$13,950/lot residential levy for the “high” density scenario and \$35,000/lot residential levy for the “low” density scenario would be required; and
- upon calculating off-site levies based on constrained geographic areas:
  - a residential off-site lot levy of \$3,200/ lot for the “high” density scenario and \$4,100/lot for the “low” density scenario was determined for the lands west of C&E Trail when levy revenue from development within “future urban expansion” is included.
  - a residential off-site lot levy of \$10,850/ lot for the “high” density scenario and \$35,850/lot for the “low” density scenario was determined for the lands west of C&E Trail when levy revenue from development within “future urban expansion” is excluded.

### ***Conclusions***

The following conclusions were derived from the *Lacombe/Blackfalds Area Structure Plan* Traffic Impact Assessment.

1. The following measures were considered when assessing the sustainability of the Preiksaitis & Associates Ltd. plan:
  - significantly increasing lot levies.
  - insisting on developer contributions to projects above and beyond the immediate development impact area.
  - securing significantly greater grants and subsidies.
  - increasing densities of the proposed country residential areas.
  - increasing infrastructure thresholds that trigger requirements (i.e. paving, intersection improvements) and as consequence accepting a lower level of service. [Thresholds are based on warrants (i.e. 400 vehicles-per-day for paving) which could be raised. This would have the effect of delaying infrastructure requirements.]
2. Lacombe County is encouraged to:
  - consider implementing a residential density of 1.25 acres/lot for proposed country residential areas (keeping in mind servicing constraints);
  - consider increasing the current residential lot levy fee from \$2,500/lot to approximately \$11,000-per-lot within the area west of C&E Trail and north of Highway 597.
  - monitor future development initiatives within the area east of C&E Trail to assure that County roadway network infrastructure improvements are sustainable.
  - consider adopting thresholds well above the current 400 vehicles-per-day warrant for paving to defer capital expenditures.

- continue to coordinate the land use approvals process with Alberta Infrastructure and Transportation to assure that future intersections along the Highway 2A corridor proceed in concert with Lacombe County development initiatives.
- review the residential land use designation for those lands bounded on the west by the Highway 2 alignment, on the south by the Blindman River and on the east by the CP Rail corridor, as access options to these lands are limited.