

Topic: Development Permit 14-D-040

**Introduction:**

TransAlta has applied for development permit approval to construct and operate a new natural gas fired electrical power plant.

**Facts (Background Information):**

The proposed site for the project is NW & SW-10-52-03-W5, which is located within the Resource Extraction District and Highvale Mine End Direct Control District. The power plant facility will be developed on about 17 acres of the subject lands. The lands are located on the southeast side of Wabamun Lake directly adjacent to the Sundance Cooling Ponds and south of the Paul Band Reserve.

The proposed development is a joint partnership between TransAlta Corporation and MidAmerican Energy Holdings Company creating "TAMA Power". TAMA Power is committed to building reliable, economical and environmentally responsible natural gas fuelled power generation facilities for Albertans. TransAlta will construct, manage, operate and maintain the Sundance 7 facility for TAMA Power. The estimated capital cost for this project is \$1.6 billion.

The construction of the Sundance 7 facility will utilize as much of the existing infrastructure as possible which will reduce the amount of land being developed. The existing cooling pond, water intake and discharge structure at the North Saskatchewan River will be used for the new facility. The estimated water consumption at full load on a hot day would be approximately 190 litres per minute.

At 51% generation efficiency, Sundance 7 is 17% more efficient than a traditional coal fired facility and will produce 66% less carbon dioxide gas (CO<sub>2</sub>) emission levels than a coal fired facility. This new facility will produce 96% less nitrogen oxide (NO<sub>2</sub>) and sulfur dioxide (SO<sub>2</sub>) than the traditional coal fire.

The Sundance 7 facility will be equipped with the advanced emission controls technologies to meet performance expectations for air emissions outlined in the Clean Air Strategic Alliance Standards and the Alberta Ambient Air Quality Objectives and Guidelines. TransAlta will have continued emission monitoring systems to ensure the regulatory requirements are met. The cumulative effects of Sundance 7 emissions will be assessed taking into consideration the operating facilities of Sundance, Keephills, the Highvale Mine and other existing industrial sources.

TransAlta is committed to being an active partner in the local community throughout the entire life cycle of Sundance 7. The public consultation for this project involves mail outs, open houses, one on one meetings, updates on the TransAlta newsletter, up to date information on TransAlta's website.

TransAlta is expecting to begin construction in mid 2015 and commissioning the facility in 2018. It is anticipated that during the peak construction time that there will be between 400 and 600 employees on site. Once the Sundance 7 facility is operational it is expected that there will be approximately 20 full time operators, 9 maintenance staff and 13 administration staff.

The development permit application was referred to Alberta Transportation for review and comments. The response back was as follows:

*"From the legal land location given in the Parkland County development permit application form, the development would be outside of the development control zone where they must obtain a permit from Alberta Transportation (300m from the highway ROW or within an 800m radius of the intersection of Highway 627 and the local road). From the drawings in their pamphlet, the development looks to be closer, perhaps within NW 3 but may still be outside our development control zone. In principal, AT does not object to this development so long as it does not adversely affect the operation of the provincial highway.*

*We note that this is a large project that is likely to generate significant traffic and that the intersection of RR42 with Hwy 627 has some challenges. It has poor sight distances and the geometric improvements are constrained by the coal mine's highway bridge over their haul road west of the intersection, making the tapers on this side of the intersection short. It is my understanding that the underpass is no longer needed because the mining on the south side of the highway is complete.*

*I would recommend that Parkland County require TransAlta to undertake a traffic impact assessment and ensure that any warranted improvements to the intersection are constructed. The department would be open to them removing their bridge and regarding the highway to improve sight lines if needed to make this intersection meet the needs of their development traffic."*

TransAlta has completed their Traffic Impact Assessment (TIA) and provided a copy to Parkland County for review. The TIA was review by Parkland County Engineering Services. Parkland County Engineering has no concerns with the analysis and recommendations of the TIA and agrees with the recommendation that roadway and intersection improvements are not required for this development to proceed.

The TIA identified access to the Project area will be primarily from Highway 627 using a portion of Range Road 42 (Paul Band Road) and Township Road 552 (Sundance Road).

This report documented the observations of the existing traffic, analyzed the impact of the additional traffic generated during the construction and operation of the proposed project. The study reviewed the geometric configuration of Highway 627/Highway 770 intersection and Highway 627/Paul Band Road intersection. Traffic operation analysis was carried out for the peak construction year of 2017 and 20 years horizon in 2033 for both morning and afternoon peak hours. Intersection improvement warrant analysis was completed based on Alberta Transportation's Highway Geometric Guide. Based on the analysis, it is concluded that:

- Both Highway 627/Highway 770 and Highway 627/Paul Band Road intersections have adequate intersection treatments for the projected traffic volume in both project construction year (2017) and operation horizon year (2033).
- Traffic will operate at an acceptable level of service at both intersections in both 2017 and 2033.
- The site generated traffic has very limited impact on the traffic operation of the two intersections in both the construction period and the design horizon year.

The TIA summary and conclusions are as follows:

#### **Highway 627 and Highway 770**

- According to AT's Highway Geometric Design Guide (1999), a Type III intersection treatment is warranted. The existing intersection treatment is similar to a Type IV with the free flow on Highway 770, which is adequate for the project traffic operations and no additional intersection improvements is required.
- The critical movements are the eastbound (EB) and westbound (WB) left turn traffic on Highway 627, operating with Level of Service of D in their respective peak hours in 2033, which is acceptable on highway intersections.
- The site generated traffic has very limited impact on the traffic operation of this intersection in both the construction period and the design horizon year.

#### **Highway 627 and Paul Band Road**

- According to AT's Highway Geometric Design Guide (1999), a Type III intersection treatment is warranted. The existing intersection treatment is similar to a Type III with the free flow on Highway 627, which is adequate for the project traffic operations.
- The critical movement is the southbound (SB) left turn traffic on Paul Band Road, operating with Level of Service of B in the peak hours of the design horizon year, which is acceptable on minor roads at intersections.
- The site generated traffic has very limited impact on the traffic operation of this intersection in both the construction period and the design horizon year.

In Canada, provincial governments have the primary regulatory responsibility for the review of applications for natural gas fuelled power generation facilities.

Regulatory requirements:

- TAMA Power will submit a Project Description to the Canadian Environmental Assessment Agency which will then determine if a Federal Environmental Assessment is required for this project.
- TAMA Power has submitted their applications to AESRD for approvals under the Environmental Protection and Enhancement Act and the Water Act. However the review process has not begun and the AESRD does not anticipate review starting until mid to late June, 2014.
- This project requires approval from Alberta Utilities Commission (AUC) under the Hydro and Electric Energy Act. A Facility Application will be submitted to the AUC that will include technical details, an assessment of potential environmental effects and summary of consultation efforts. TAMA will also require a Connection Order from the AUC.
- A Historical Resource Clearance from Alberta Culture must be obtained.
- Approvals are required under the Alberta Safety Codes Act.

#### **Alternatives:**

1. Council could approve Development Permit 14-D-040 with amended conditions of approval
2. Council could table Development Permit 14-D-040 and request additional information.
3. Council could deny Development Permit 14-D-040.

#### **Conclusion/Summary:**

In conclusion, Administration supports the proposed development permit application, provided the conditions as noted in Schedule "A" to this report are included in Development Permit 14-D-040.

**AUTHOR: Karen Kormos**

Department: Planning and Development

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