

# **TOWN OF VULCAN**

## POLICY MANUAL

### TITLE OF POLICY

Transportation Policy

### POLICY NUMBER

T-1

### SUPERCEDES POLICY NO:

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## **TRANSPORTATION POLICY**

### **Introduction**

The purpose of this policy document is to designate controlled streets within the Town of Vulcan. The efficient flow of traffic is important for all aspects of a community. From industry to tourism, all sectors of the economy benefit from a good transportation system. Land use in Vulcan will be affected to a great extent by the amount and type of traffic that will be travelling within, around and through the community.

### **Transportation Goals**

The following goals should be reviewed and considered with every proposal.

1. Improve safety on all streets.
2. Preserve peace and quiet in residential areas.
3. Provide a framework for making decisions on access to Town streets.
4. Provide pleasant and safe systems for pedestrians and bicyclists.
5. Create an efficient system of streets for the movement of vehicles through Town and for the circulation of vehicles within the Town.

### **Local Roads Context**

At the local road network level, the road pattern in the Town is arranged in a traditional grid system with the exception of the residential subdivisions south of Highway 534 that includes crescents and cul-de-sacs. Five crossings across Highway 534 provide access between the north and south halves of Town.

The development south of Highway 534 has been developed following modern trends of street pattern. This area and subsequent annexation areas will for the most part use a non-grid street pattern. Non-grid street patterns have to be reviewed with different development criteria. A grid pattern for the most part separates traffic across the pattern and allows driver's choices for reaching destinations. Modified grid patterns and curvilinear street patterns require an identified hierarchy of streets generally broken into the following categories: highways, arterials (major collectors), minor collectors, and local streets.

As the Town grows, increased traffic on the street system will follow. There is a need to balance growth and accommodate additional traffic with the goal of maintaining the rural character of the community and the safety of the public. The Level of Service and the volume- to-capacity (V/C) ratio need study and will require additional attention as the Town grows.

Level of Service (LOS) is a scale that measures the operating capacity likely to be encountered on a roadway or at the intersection of roadways, based on a volume-to-capacity ratio, with levels ranging from A to F, with A representing the lowest volume-to-capacity ratio and the highest.

Level of Service. Volume-to-Capacity Ratio is the ratio of demand flow rate to capacity for a traffic facility.

- Level-of-Service A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. The general level of comfort and convenience provided to the motorist or passenger is excellent.
- Level-of-Service B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. There is a slight decline in the freedom to maneuver within the traffic stream. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
- Level-of-Service C is in the range of stable flow but marks the beginning of the range of flow in which the operation of individual users becomes affected by interactions with others in the traffic stream. Maneuvering within the traffic stream requires vigilance on the part of the user. The general level of comfort and convenience declines at this level.
- Level-of-Service D represents high-density but stable flow. Freedom to maneuver is severely restricted, and the driver experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
- Level-of-Service E represents operating conditions at or near the capacity level. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to give way to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor disturbances within the traffic stream will cause breakdowns.

- Level-of-Service F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations with the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, and then be required to stop in a cyclic fashion.

### **Highways Context**

Vulcan is located at an intersection point of two Alberta Highways: Highway 23, running north and south; and Highway 534, running east and west. Highway 23, a two-lane highway, acts as an alternate to Highway 2 for north-south traffic. Highway 23 also links Vulcan to the City of Calgary in the north and the City of Lethbridge in the south. As seen in Map 1, Highway 23 acts as a physical barrier separating the main residential area to the southwest from the annexed portion of highway commercial and undeveloped land to the east.

Access management policy for those portions of Highways 23 and 534 running through Town is outlined in the Vulcan Access Management Study Highway 23 and Highway 534 Final Report completed for Alberta Transportation by Urban Systems in November 2004. It is recognized that solutions for access control on the Highways directly impacts the local street network. Therefore, the Town of Vulcan will take an active role in discussing options and solutions with Alberta Transportation.

### **Street Capacity**

The street capacity policies attempt to retain Vulcan's small town lifestyle by defining for builders and developers criteria to consider with each proposal. The following policies do not fully define the engineering standards, but give general guidance for reviewing projects.

### **Street Capacity Policies and Programs**

1. Level of Service C, as defined above with no individual movement lower than the Level of Service D to E, is the desired standard for the Vulcan Street system. New Local and Collector streets shall be designed to operate at that level.
2. Town streets shall be classified according to function, as defined in Map 1 and as follows:
  - Local Streets shall be low-speed, low-volume facilities which are used primarily to access property.
  - Minor Collector Streets shall be moderate-speed, low-to medium-volume facilities which serve to collect traffic from local streets and distribute to the arterial system. Collector streets also provide for direct property access, but their role of serving traffic is equally important.
  - Major Collectors are designed to move traffic efficiently. Property access is deemphasized, whereas traffic movement is emphasized.

Engineering standards for volume thresholds can be obtained from the Town's Engineer.

3. Existing collector streets or intersections, operating below Level of Service C may continue to operate at the lower level. New development shall not cause collector streets to degrade to a lower Level of Service.

4. The Town shall have the right to review and approve internal circulation plans for all new developments.

5. All new private streets shall meet minimum Town engineering standards.

6. Traffic studies shall be required for all major development proposals and may be required at the discretion of the Town under other circumstances where there may be significant effects on the street system overall. A major development may include, but is not limited to the following:

- an Area Structure Plan (ASP), or
- commercial development proposals, or
- industrial development proposals, or
- multi-unit residential development proposals, or
- tentative subdivision maps, or
- when any proposal would potentially increase a Level of Service.

7. All transportation studies shall be completed at the sole expense of the developer. Traffic studies shall identify:

- (a) the amount of traffic to be added to the system by the proposed development;
- (b) other known planned projects and their effects on the street system;
- (c) the direct, indirect and cumulative adverse impacts of project traffic on Street system operations, safety, and access to the downtown;
- (d) mitigation measures necessary to provide for project traffic while maintaining Town level -of-service standards;
- (e) the responsibility of the developer to provide improvements;
- (f) the timing of all improvements
- (g) and any other information deemed necessary by MPC or council,

## **Access Management**

Roadways are identified and grouped by the character of service they provide, using concepts of mobility and access. Mobility refers to the potential for movement and access refers to the entry of vehicles to and from a roadway. Vehicles need to access a roadway, but they also interrupt the flow of traffic. Access management controls the amount of interruptions, in a manner appropriate to the adjacent land uses and traffic volumes. Access management standardizes the need for access in concert with the maintenance of traffic flow.

Freeways and principle arterials logically provide the greatest mobility, carry the highest volumes of traffic, and therefore need limited access. Collector roadways and neighborhood streets provide a high degree of access but, due to speed and design needs, offer limited mobility. Generally speaking, the more access management, the greater number of vehicles can be moved on a roadway.

The following access management policies are to be augmented with the guidelines in Appendix A to achieve the best solution for each proposal. For the purposes of this section arterial shall equal major collector.

## **Access Management Policies**

### **Major Collectors**

1. For the purposes of access management of Vulcan's collector system intersection spacing shall be 120 in for all right of ways. Spacing between two major collectors can be found in subsection 5 below. Driveway and alley accesses should also be limited and where allowed should be right turn in and right turn out only.
2. Vulcan County landowners' access onto Town controlled roads requires the landowner to enter into a Servicing Agreement with the Town and adhere to all engineering requirements and other access control policies.
3. Offset driveway locations should be avoided whenever possible.
4. Where the street frontage is proposed to be improved, all abandoned driveways shall be removed and the curbing and side walk to be restored to Town standards.
5. The continued use of pre-existing driveways may be prohibited with the redevelopment of a site.
6. Driveways providing access onto major collector streets may be denied if alternate access is available or if the Town identifies potential safety issues.

7. For the purposes of major collectors, residential driveways shall not face the street, which means garages must be located in the rear of properties and accessed via alleys. All other uses shall have limited access and take advantage of shared access driveways. Turning movements may be limited to right in and right out.
8. Access control on arterial [major collector] roadways should be uniformly applied and maintained in urban areas to reduce congestion and traffic delay, and to encourage safety and economy of the transportation system. (Source: Alberta Transportation)
9. Access control should address the varying needs and functions of each arterial [major collector] roadway section, which will depend on: abutting land use type, existing and proposed development, density of development, and relative urban location. For example, more frequent intersection spacing with some direct access will likely be necessary in central business areas (due to existing development), whereas in outlying residential areas, there should be no direct access and [major collector] intersections should be spaced at least 400 in apart. (Source: Alberta Transportation)
10. All functional planning and preliminary design of arterial [major collector] roadways should assess the ramifications of access accommodation to all abutting property parcels and developments (existing and proposed), in conjunction with projected traffic volumes and operating speed. (Source: Alberta Transportation)
11. To overcome operational problems on existing arterial [major collector] roadways, access control should be exercised following an assessment of existing and potential accident rates and vehicle delay, and prediction of the effects of access control techniques. (Source: Alberta Transportation)
12. The Town of Vulcan will exercise its authority to control access on arterial [major collector] roadways. Such control can be applied and maintained by adopting set standards, by making developers and planners aware of arterial [major collector] roadway standards, and by working with the private sector to ensure suitable land access. (Source: Alberta Transportation)

#### **Minor Collectors**

13. Vulcan County landowners' access onto Town controlled roads requires the applicant to enter into a Servicing Agreement with the Town and adhere to all engineering requirements and other access control policies.
14. Where the street frontage is proposed to be improved, all abandoned driveways shall be removed and the curbing and side walk to be restored to Town standards.
15. The continued use of pre-existing driveways may be prohibited with the redevelopment of a site.

**Truck Route**

16. The Truck Route through Town is Highway 23 and Highway 534.
17. The internal truck route for access to commercial and industrial business includes Centre Street, 1 Avenue, 2 Avenue N and 10<sup>th</sup> Avenue N. For the complete route see Map 1.

**Pedestrians**

18. All major and minor collector roads shall have a sidewalk on both sides of the street.
19. Trails shall not have midblock crossings on major collectors and should be avoided on minor collectors. All crossings on these street categories should be at intersections for pedestrian safety and free flow of traffic .Any approved midblock crossings shall be designed with pedestrian safety features.

## APPENDIX A

### Guidelines and Techniques for Partial Access Control (Alberta Transportation)

Intersection Spacing	Intersections of all types (i.e. four leg or three leg) which involve a median break on arterial streets and expressways should be placed ideally 400 meters apart. T-intersections, permitting right-in/right-out turning movements only (no median break), may be located a minimum distance of 100 meters away from the nearest all-directional intersection. In restricted areas of "existing" development only, it may be necessary to reduce the spacing of intersections on arterial streets to a minimum of 200 meters.
Raised Median Treatment	to limit the conflict caused by left-turning traffic exiting or entering an arterial roadway, raised median treatment is recommended. At intersections, medians should be of sufficient width to accommodate left-turn bays which provide shelter areas and storage for left-turning traffic.
Median Openings	median openings are allowed only at public roadways and major traffic generators (such as shopping centres), subject to the recommended intersection spacing criteria. If direct access is provided to a major traffic generator, the internal roadway must be of sufficient length to avoid interference of exiting traffic with through traffic on the arterial roadway.
Frontage/Service Roads	development of frontage roads (service roads) is recommended for replacement of existing direct accesses, as in the case of strip commercial development. In newly developing areas, the subdivision layout should make provision for adequate indirect access from an internal roadway system.
Access Removal Redevelopment	when redevelopment of property abutting an arterial roadway occurs, the through municipality should make every possible effort to remove existing direct access.
Auxiliary Lanes	when direct accesses exist, and the construction of a service road is impractical, an auxiliary lane should be constructed to serve for acceleration and deceleration movements associated with exit and entry to and from the direct access point locations.
New Development Access	direct access to new private or commercial development should not be permitted, except in cases where alternate indirect access is not feasible at a reasonable cost. If direct access is deemed necessary, only right-in/right-out access should be allowed. Otherwise, access should be gained from collector or local streets intersecting the arterial roadway.
Conflicting	direct access in the vicinity of left-turn or right turn storage bays at intersections

Movement Reduction	should not be permitted for safety and capacity reasons in order to eliminate the conflicting impact of local traffic on through traffic movements.
Common Access Point	where two (2) adjacent properties require direct access, a common access point should be provided to accommodate the needs of both properties.
Parking Restrictions	in order to maximize roadway capacity and safety, parking on major arterial roadways should be discouraged, especially during the peak-hour traffic periods.
Geometric Design Features	where direct access is provided (near intersections, lanes, private driveways etc.), the geometric design features chosen (turning radii, access width, profile, sight distance) should be thoroughly checked to ensure that they will adequately handle the vehicle types known to be the major users at these access locations. Such design encourages efficient exit and entrance movements, thereby minimizing the impact of local traffic on through traffic.

