

1.9 Road Rationalization

1.9.1 THE CONCEPT OF ROAD RATIONALIZATION

When first established the “Kings Highway System” provided a major inter-centre connector. A County or regional road system provide this same service on a reduced scale, connecting smaller centres of population and providing a “farm to market” road link. The local road acted as the final link in the system providing access to the abutting properties. These roles have changed very little over time. However, in many areas of the province significant changes in settlement patterns, population and employment have left some areas with designation of roads that is no longer appropriate. The Province of Ontario have taken the lead in the re-designation of their road system and has began to shift responsibility for some roads to the local, county and regional levels.

Road service providers are requested to demonstrate accountability for road maintenance services. The efficient and effective delivery of road services is a priority of municipal customers (the road user and taxpayer). One step in demonstrating accountability is in rationalizing road jurisdiction between a County (Region) and local municipalities. This rationalization will ensure that local roads serve primarily a local function and County (Regional) roads serve a through traffic function. Another benefit to the transferring of roads is a County (Regional) road that is a low priority to the upper tier, once transferred, may become a high priority for the local municipality and see significant improvements over time. Likewise a high volume local road carrying primarily through traffic may receive higher levels of service than the local municipality was able to provide.

The road rationalizing method as shown in this report permits a review of the road system within an county (region). The outcome of the review is a determination of the appropriate jurisdiction of a road or road section.

1.9.2 BY-LAWS

Each County or Regional municipality has been granted the power under the Public Transportation and Highway Improvement Act or their respective Regional Act to establish, maintain, add or remove designated roads from or to their county or regional road system.

The Public Transportation and Highway Improvement Act (PTHIA) provides for the establishment of a county road system. The county road systems were established in the early years of this century by by-laws passed by each council. The roads which comprise a county road system established under the PTHIA are county roads whether they be in a town, a village or a township. When the task of determining what alterations have been made to the physical system or when it is desirable to review municipal service delivery, a new system can be designated by a new establishing by-law. In effect, the slate is wiped clean and the road system starts afresh.

1.9.3 PRINCIPLES OF ROAD RATIONALIZATION

- Upper Tier roads, which are primarily transportation corridors, should provide continuous roadway service throughout the county or region.
- Upper Tier roads should be capable of being upgraded to a reasonable standard consistent with the service to be provided.
- Upper Tier roads should be along the shortest practical route, along existing roads and streets.

1.9.4 GOAL OF A ROAD RATIONALIZATION STUDY

- To develop a County (Regional) Road System that reflects the realities of today and beyond.

1.9.5 TERMS OF REFERENCE

- Conduct a road rationalization study, evaluating criteria prepared by the Ministry of Transportation in their document “Upper Tier Road Classification Criteria”. Modifying the criteria based on information as shown in this document.
- This review will focus on the efficient and effective delivery of all road services within the county or region.
- Transfer roads to the local municipalities which serve primarily a local function.
- Transfer roads to the County (Region) which primarily serve a through traffic (regional) function.
- Consider road condition and compensation throughout the discussion of road transfers.
- Involve the local municipalities in the decision making process by encouraging feedback and comments.

1.9.6 METHODOLOGY

The review of every road section within the county and local municipalities will be time consuming and probably unnecessary. By each local municipality identifying roads that they believe serve a through traffic function will save a time consuming road by road analysis.

- Review the criteria as shown in figure 1.9.7 and modify to meet specific municipal requirements.
- Apply the criteria to all existing county (regional) roads and roads identified by the local municipalities as candidates for upper tier road classification.
- Weight the criteria as shown in this document.

- Determine “cut-off” weight for inclusion of individual road sections in the County (Regional) system.
- Develop a County (Regional) road system.
- Determine the needs to be addressed (i.e. surface condition) prior to the transfer of roads to the local municipality or the acceptance of roads by the county (region)
- Determine impact on local municipalities as well as county or region.
- Present findings to council.

1.9.7 CRITERIA AND THE WEIGHTS APPLIED

Criterion 1 *Urban Center Connector*

Connect Urban Centres to each other or to a Kings Highway unless such a service is now provided by a Kings Highway.

Weighting Applied = 3

Criterion 2 *Kings Highway/Upper Tier Connector*

Connect major commercial and industrial areas, universities, hospitals, international border crossings and provincial boundaries, etc. to a Kings Highway or Upper Tier road.

Weighting Applied = 2

Criterion 3 *Heavy Industry Service*

Provide service within 4 km. of consistent major attractors or generators of heavy vehicles.

Weighting Applied = 2

Criterion 4 *Barrier Service*

Provide service parallel to and across major barriers to free traffic movement such as freeways, watercourse or congested areas.

Weighting Applied = 1

Criterion 5 *Resort Criterion*

Provide service within 4 km. of a major resort and/or recreational areas

Weighting Applied = 1

Criterion 6 *Urban Cell Service*

Provide service in urban areas within the cells formed by the Kings Highways and the streets selected by the above criteria, provided that the traffic demand existing on the street is considered predominantly for through traffic.

Weighting Applied = 0

Criterion 7 *Urban Arterial Extension*

Provide service on those roads which are extensions of urban arterial streets, from the urban limits to the first intersection where the AADT is below 700 vehicles per day, then connect to an upper tier road or a Kings Highway by the shortest route.

Weighting Applied = 3

Criterion 8 *Rural Cell Service*

Provide service in rural areas within the cells formed by the Kings Highways and the roads selected by the above criteria.

Weighting Applied = 0

Criterion 9 *Traffic Speed*

Provide service on roads where the speed limit is 80km/hr.

Weighting Applied = 1

Criterion 10 *Road Surface*

Provide service on roads with an asphalt surface.

Weighting Applied = 0.5

Criterion 11 *Traffic Volume*

Provide service on roads with current traffic volumes greater than 1000 vehicles per day.

Weighting Applied = 0.5

Criterion 12 *Road Right of Way*

Provide service on roads with at least a 66 foot wide right of way.

Weighting Applied = 1

1.9.8 APPLICATION GUIDELINES

Criterion 1 (Urban Centre Connector) and Criterion 7 (Urban Arterial Extension) are considered the most important criteria, as upper tier roads should serve as inter-municipal corridors to connect the small urban centres within the county or region. In order to apply criterion 1 a determination of what constitutes an urban centre is required.

Criterion 1 *Urban Centre Connector*

This criterion is intended to identify roads which provide service to and from centres having commercial and possibly industrial development.

Urban centres are areas of concentrated development, not “ribbon” development.

The criterion is not intended to be applied to residential subdivisions which are developing in rural areas. When the residential development grows to a sufficient size, upper tier road service may be considered through the application of all of the criteria.

Criterion 2 *Kings Highway/Upper Tier Road Connector*

The intent of this criterion is to extend the Kings Highway or upper tier road to connect to the facilities mentioned and not to provide for lateral connections between highways/upper tier roads.

Major institutional/commercial/industrial complexes are areas generating more than 1000 vehicle trips per day.

Criterion 3 *Heavy Industry Service*

It is not intended that it be an upper tier responsibility to provide service to the entrance of every attractor or generator of heavy vehicles in an area. Rather, it is intended that upper tier service be provided close to the

industry and that the distribution within the area of the industry be a lower tier responsibility.

“Close to” means within a distance of approximately 4.0km.

“Consistent major attractor or generator”, in the case of gravel pits and quarries, is defined as approximately 9 months or more of operation per year.

Landfill sites under the jurisdiction of, or serving the upper tier municipality, may also be considered as attractors of heavy vehicles and may be serviced by upper tier roads.

Criterion 4 *Barrier Service*

The intent of this criterion is to alleviate traffic on local roads by providing service parallel to or across barriers to traffic movement where upper tier service is justified. The barrier must be an obstacle to traffic wishing to cross it and it must be feasible to cross (i.e. freeways by interchanges and rivers by bridges)

Service is provided “parallel to” only if there is no other upper tier or provincial road providing that service within a reasonable distance and only along roadways which are used to reach barrier crossings.

Criterion 5 *Resort Criterion*

The intent of this criterion is to provide upper tier service close to resort/recreational areas or to a lower tier road system that distributes the traffic.

“Close to” means within a distance of approximately 4.0km from the edge of the resort development.

A major resort/recreational area is an area generating a minimum of 700 vehicle trips per day during normal season of operation.

Criterion 6 *Urban Cell Service*

The intent of this criterion is to identify roads in the cell under consideration at the spacing noted. The roads so identified must function predominately for through movement of traffic.

Roads which function as minor collectors for trips with origin and destination within the cell should be rejected.

The cell population density considered in identifying the appropriate spacing should be either the daytime or night time population whichever is greater.

Population Density	Additional service required when spacing of roads is greater than
less than 40 persons/hectare	2000m
between 40 and 125 persons/ha	1200m

Criterion 6 and 8 are not included in the original application of criteria but could be used as a rationale for including additional roads or road sections to complete the road network. The reasoning behind excluding this criterion in the original application is due to the good condition of most local roads and the fact the majority of population has access to a motor vehicle or alternate transportation services (i.e. transit).

Criterion 7 *Urban Arterial Extension*

The intent of this criterion is to provide for the extension of urban arterial streets into the rural areas to connect with an upper tier road or a Kings Highway. Traffic counts should be taken on both sides of the intersection with the upper tier and the extension continued through the

intersection, only if both AADT's equal or exceed 700 vehicles per day.

Criterion 8 *Rural Cell Service*

The intent of this criterion is to provide upper tier service within the cell formed by the application of criteria 1 - 7 inclusive at spacing related to population density within the cells.

Upper Tier roads or provincial highways in the subject upper tier or in adjacent upper tiers act as rural cell boundaries.

Population Density	Additional service required when spacing of roads is greater than
less than 1 person/km ²	no additional service
1 person/km ²	25 km
between 1 and 4 persons/km ²	20 km
between 4 and 8 persons/km ²	15 km
between 8 and 16 persons/km ²	10 km
greater than 16 persons/km ²	6 km

Criterion 9 *Traffic Speeds*

This criterion is intended to identify those roads which have a speed limit of 80 km/h. This is deemed to be a desirable speed limit allowing roads which predominately serve as inter-municipal links in a road network to do so efficiently.

Criterion 10 *Road Surfaces*

This criterion is intended to identify those roads with an asphalt surface. These roads were deemed to be more appropriate to serve as upper tier roads, as this surface material would be more durable to withstand the greater traffic volumes, heavier vehicles and higher speeds as anticipated on upper tier roads.

Criterion 11 *Traffic Volumes*

This criterion was intended to identify roads with current traffic volumes greater than 1000 vehicles per day.

Criterion 12 *Road Right of Way*

The intent of this criterion is to identify roads with a right of way width of 66 feet. It is appropriate to be considered for an upper tier road designation that the road have at least a standard right of way.

Apply each of the criteria in section 1.9.7 to the existing upper tier road system and to local roads identified by each municipality as a provider of through traffic service. Criterion 6 and 8 are not included in the original application of criteria but could be used as a rationale for including additional roads or road sections to complete the road network.

1.9.9 CUT-OFF WEIGHT

After the criteria has been applied to each road being analyzed it is possible to determine how much weight each road has accumulated. By setting a minimum weighting of six points, a cut-off threshold is established for including a road in the upper tier system.

This would mean that to qualify for upper tier designation a road must meet either the criteria for Urban Centre Connector or the criteria for Urban Arterial Extension worth 3 points, plus all four criteria for Traffic Speed, Road Surface, Traffic Volume and Road Right-of-Way worth a combined total of 3 points, or another combination of criteria to have a total weight of 6. This becomes the yardstick to be used for recommending the redesignation of roads.

1.9.10 SAMPLE BY-LAW

Consolidation By-law

THE CORPORATION OF THE COUNTY (REGION) _____
BY-LAW No. _____

Being a by-law to add a road(s) to and remove a road(s) from the County (Regional) Road System and consolidation of all By-laws with respect to roads included in the County (Regional) Road System.

The Council of the Corporation of the County (Regional Municipality) of _____ enacts as By-law No. _____ the following:

By-law No. _____ and the schedule thereto, being the last by-law consolidating all previous By-laws with respect to roads included in the County (Regional) Road System, as amended by By-law(s) No. _____, _____ and _____ of the road(s) known as County (Regional) Roads Number _____ is hereby amended by

- (a) removing therefrom Plan(s) Number(ed) _____, _____ and _____ respectively, and
- (b) adding thereto Plan(s) Number(ed) _____, _____ and _____ of the roads to be known as County (Regional) Roads Number(ed) _____, _____, _____ and _____ respectively

Pursuant to Subsections 44(5) and 44(6) of the Public Transportation and Highway Improvement Act RSO. 1990, Chapter P50 all roads included in the County Roads System including the road(s) referred to above are removed therefrom.

(Pursuant to Subsection _____ of the Regional Municipality of _____ Act RSO 1980, Chapter _____ all roads included in the Regional Road System including the road(s) referred to above are removed therefrom.)

The roads shown as County (Regional) Roads on several plans numbered _____ , comprising the schedule to this by-law are added to the County (Regional) Road System and are designated as County (Regional) Roads.

The roads shown as County (Regional) Roads on the several plans numbered as referred to hereinabove comprising the Schedule to this By-law shall be known by the numbers shown on the said plans and such numbers shall be used for all purposes of administration and accounting.

This by-law shall come into force and effect upon and to the extent of the approval thereof by the Lieutenant Governor in Council, pursuant to the above mentioned Act.

PASSED this _____ day of _____ , 19____ .

Warden (Chairman)

(Seal)

Clerk

1.9.11 SUMMARY

Demonstrating accountability to the customer (taxpayer) and the efficient and effective delivery of road services is in the forefront of everyone's decision making process. In a two tier system of service delivery optimizing program performance requires the rationalizing of road jurisdiction.

Roads transferred between jurisdictions have the benefit of higher priority or service levels applied by the receiving upper or lower tier. A low priority road at the upper tier level may receive more attention at the lower tier. This is already happening on highways transferred from the province. The new owner in some instances already repairing what the province was going to delay for years to come.