

## STREETS AND SIDEWALKS

### 101 Attachment 1

#### Town of Kirkland

Table 1  
Low-Volume Road Classification

Road Use			Guidelines		
Road Classification	Vehicle Type	ADT(1)	Rehabilitation Design Type	Maintenance	Traffic Control
1. Low-volume collector	All vehicles	50-400 <50	A B	Normal	MUTCD(L)
2. Residential access	Cars, emergency and service vehicles	50-400 <50	B C	Normal Normal	MUTCD MUTCD
3. Farm access	Cars, light trucks, occasional heavy trucks, farm equipment	250-400 <250	A B	Normal Normal	MUTCD MUTCD
4. Resources/ industrial access	Trucking, employees' cars	50-400 <50	A B	Normal Normal	MUTCD MUTCD
5. Agricultural land access	Occasional farm equipment, seasonal	-	C	Minimum maintenance	MUTCD
6. Recreational land access	Cars, R.V.'s, seasonal	50-400 <50	B C	Normal Minimum maintenance	MUTCD MUTeD

NOTES:

(1) ADT is the average daily traffic.

(2) MUTCD is the Manual of Uniform Traffic Control Devices supplemented by the Traffic Sign Handbook for Low Volume Roads, New York State Department of Transportation Traffic and Safety Division, June 1985.

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## 101 Attachment 2

### Town of Kirkland

Table 2  
Design Guidelines for Road Rehabilitation by Road Type

Type A All Purpose Road		TypeB Area Service 2-Way 2-Lane Road	TypeC Area Service Single-Lane 2-Way Road
Minimum width traveled way	18 feet 1	16 feet'	10 feet-
Shoulder	2 feet	2 feet	
Opposing vehicle interactions	All vehicles pass with no speed reductions	1. Trucks cannot meet without reducing speed  2. Cars cannot meet trucks without reducing speed  3. Cars pass with almost normal speed	All vehicles require special widening for passing
Operating speed'	45 mph or greater	25 mph to 45 mph	40 mph or less
Typical surface material"	Asphaltic concrete ADT >150	Asphaltic concrete ADT >100	Usually un surfaced
	Aggregate ADT <150	Aggregate ADT <100	
Surface condition	No adverse effect on operating speed	May cause reduction in operating speed	Reduced operating speed

#### NOTES:

- (1) Add two feet to the traveled way if significant truck traffic is present.
- (2) If farm vehicles are present, maintain twenty-foot horizontal clearance. Widening of traveled way should be provided at approximately one-thousand-foot intervals to allow vehicles to pass.
- (3) Applicable to normal maintenance roads.
- (4) ADT thresholds recommended based on the economic analysis, "Economic Evaluation of Pavement Design for Low Volume Roads," Proceedings of the Third International Low Volume Road Conference 1983, Cornell University.

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### *101 Attachment 3*

#### Town of Kirkland

Table 3  
Cross Slope Drainage Criteria, by Surface Type"

Surface Type	Range in Cross Slope
High (asphaltic, etc.)	1.5% to 2.0%
Intermediate (surface treated)	1.5% to 3.0%
Low (unpaved)	2.0% to 6.0%

Clear Zone: The width of the roadside area that should be studied for possible hazard mitigation measures varies with the operating speed, traffic level and degree of curvature of the road. Desirable clear zones are indicated below. (Clear zone is measured from the edge of the traveled way.)

Type A Road: a ten-foot clear zone is desirable.

Type B Road: a two-foot to five-foot clear zone is desirable; a ten-foot clear zone on the outside of sharp curves and on curves at the bottom of long grades is desirable.

Type C Road: a two-foot clear zone is desirable; a wider clear zone on the outside of sharp curves is suggested. On minimum maintenance roads a clear zone may not be provided.

Hazard mitigation measures to be considered include:

- (1) Improved delineation of the road including edgelines, delineators and reflectors.
- (2) Guiderail
- (3) Berms and earth work
- (4) Drainage modifications
- (5) Removal of the hazard

Property owners should recognize the legal right of local government to remove fixed objects within the right-of-way of the road.

Guiderail: New York State Department of Transportation guiderail and bridge rail designs are intended for high-volume, high-speed highways and are often too expensive for many low-volume road applications. Alternative designs that are less expensive and adequately tested to assure performance may be used on low-volume roads.

#### NOTES:

(I) Source: AASHTO Policy for Geometric Design of Highways and Streets, 1984.

# STREETS AND SIDEWALKS

## 101 Attachment 4

### Town of Kirkland

Table 4  
Maintenance Activities For Low Volume Activities  
and Minimum Maintenance Town Roads

Activity	Normal Maintenance Roads	Minimum Maintenance Roads
Surface Maintenance		
Crack sealing	As necessary	Maintain in manner determined by town highway superintendent consistent with volume and type of traffic and in the manner stated in § 101-27 of this article.
Patching and pothole	On demand	
Surface seals	As necessary	
Thin overlays	As necessary	
Snow removal	Roads kept clear	
Shoulder maintenance	Grading cleaning	Infrequent
Blading	Regular	
Roadside Maintenance		
Cleaning	As necessary	Maintain in manner determined by town highway superintendent consistent with volume and type of traffic and in the manner stated in § 101-27 of this article.
Mowing	Regular	
Brush control	Site distance maintained	
Guiderail maintenance	Regular	
Drainage:		
Structure	As necessary	
Ditches	Positive drainage maintained	
Slopes	Repair failures	
Bridges		
Cleaning	As necessary to preserve bridge	Maintain in manner determined by town highway superintendent consistent with volume and type of traffic and in the manner stated in § 101-27 of this article.
Lubrication	As necessary to preserve bridge	
Painting	As necessary to preserve bridge	
Deck	As necessary to preserve bridge	
Drainage	As necessary to preserve bridge	
Signs	MUTCD!	MUTCD(!)

NOTE:

(I) MUTCD is the Manual of Uniform Traffic Control Devices.