Street Design Standards Update

Plan Commission Transportation Subcommittee

November 5, 2019

The City of Choice

Street Characterization

Characterization = Classification + Context

- Classification
  - Principal, Minor, Major or Minor Collector, Local
- Context
  - Based on Land Use Zoning

Street Design Standards

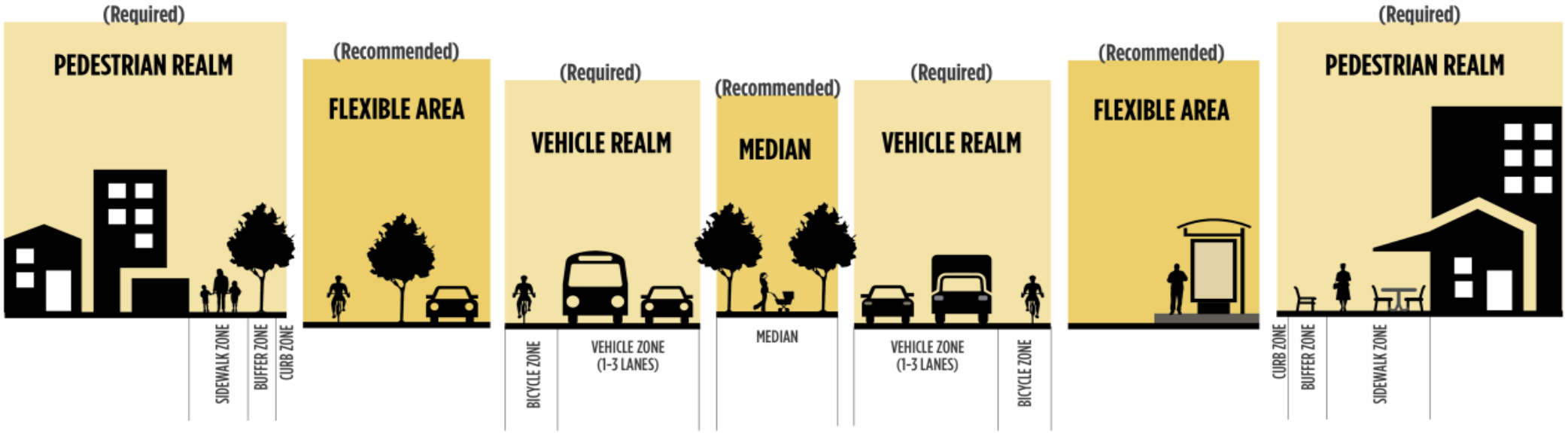
All Ages and Abilities

The City of Choice

Users of the Street

- **Who do streets serve?**
- **How should a street cater to all ages and abilities?**
- **What design features improve this?**

Components of the Street



Sidewalk Zone
Walkway
Building Frontage

Buffer Zone
Street Trees/Grass
Bioswales
Street Furniture
Driveways

Curb Zone
Curb

Curb Extensions
Bioswales
Parking/Loading
Turn Lanes
Bicycle Facilities
Shared-Use Paths
Bus Bulbs

Bicycle Zone
Bicycle Facilities
Bicycle Facility Buffer

Vehicle Zone
Transit Lane
Auto Lane

Median
Landscaping
Bioswales
Shared-Use Paths
Pedestrian Crossing Refuge
Turn Lanes

Bicycle Zone
Bicycle Facilities
Bicycle Facility Buffer

Vehicle Zone
Transit Lane
Auto Lane

Curb Extensions
Bioswales
Parking/Loading
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Shared-Use Paths
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Street Trees/Grass
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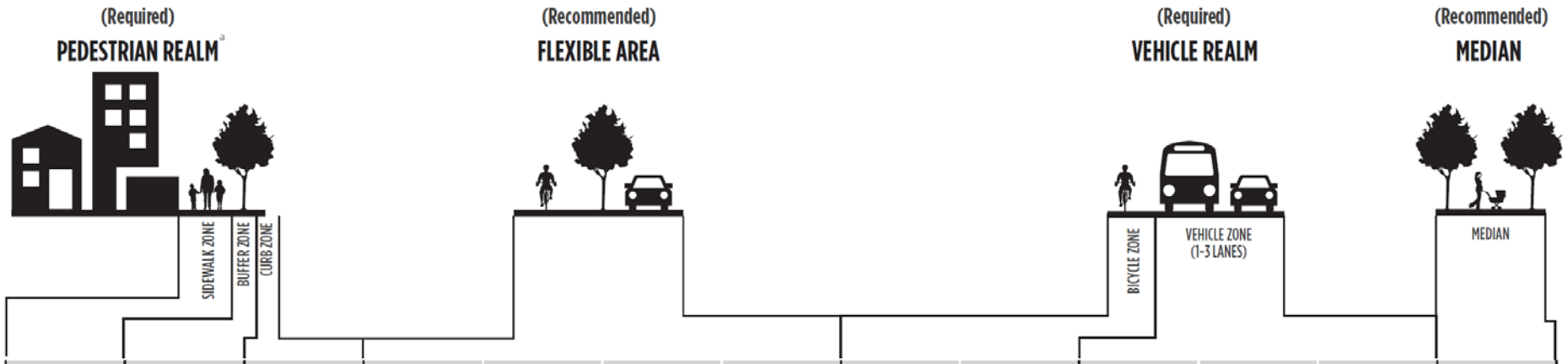
Street Furniture
Driveways

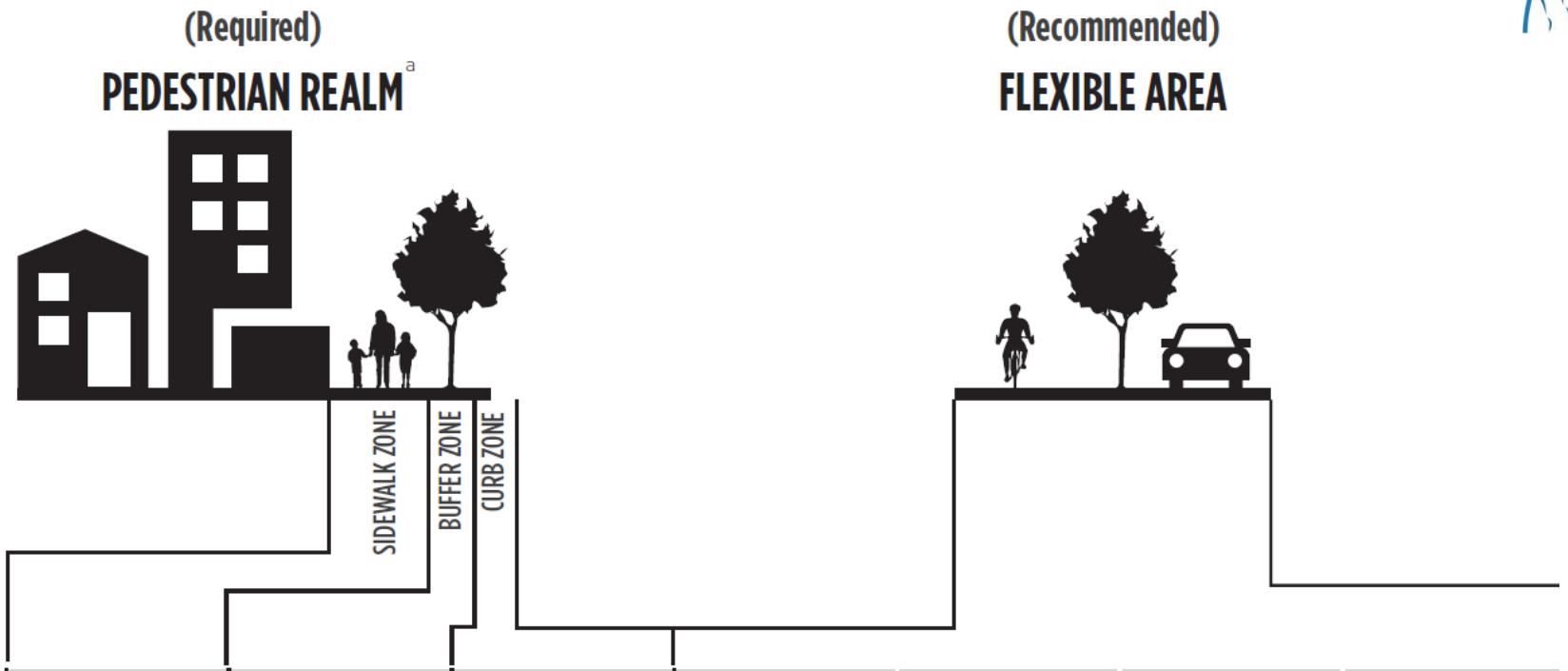
Curb Zone
Curb

Components of the Street



	Sidewalk Zone	Buffer Zone[b,c]	Curb Zone	Opt. Shared Use Path[e,f]	Stormwater Management[g]	Curb Extensions[h] / Bus Bulbs[i]	Parking	Bicycle Zone[f]	Bicycle Buffer[k]	Vehicle Zone Outer Lane[i,m]	Vehicle Zone Inner Lane[i]	Vehicle Zone Left Turn or TWLTL	Median[n]
Center & Corridor CC1, CC2, CC3, CC4													
Urban Principal Arterial	8	4	0.5	12	10	7	8	6	2	11	11	10	2
Urban Minor Arterial	8	4	0.5	12	10	7	8	6	2	11	11	10	2
Urban Major/Minor Collector	8	4	0.5	12	10	7	8	6	2	11	11	10	2
Urba Local Access	5	6	0.5	12	6.5	NA	8	6	NA	10	NA	NA	12
Downtown DTC, DTG, DTU, DTS; Commercial O, OR, NR, NMU, CB, GC; and Form Based Code CA1, CA2, CA3, CA4													
Urban Principal Arterial	7	5	0.5	12	10	7	8	6	2	11	11	10	2
Urban Minor Arterial	7	5	0.5	12	10	7	8	6	2	11	11	10	2
Urban Major/Minor Collector	7	5	0.5	12	10	7	8	6	2	11	11	10	2
Urba Local Access	5	6	0.5	12	6.5	NA	8	6	NA	10	NA	NA	12
Residential RA, RSF, RSF-C, RTF, RMF, RHD													
Urban Principal Arterial	6	3	0.5	12	6.5	NA	8	6	2	11	11	10	2
Urban Minor Arterial	6	3	0.5	12	6.5	NA	8	6	2	11	11	10	2
Urban Major/Minor Collector	6	3	0.5	12	6.5	NA	8	6	2	11	11	10	2
Urban Local Access	5	6	0.5	12	6.5	NA	8	6	NA	10	NA	NA	12
Industrial LI, HI, PI													
Urban Principal Arterial	6	6	0.5	12	6.5	NA	NA	6	3	12	12	12	3
Urban Minor Arterial	6	6	0.5	12	6.5	NA	8	6	3	12	12	12	3
Urban Major/Minor Collector	6	6	0.5	12	6.5	NA	8	6	3	12	12	12	3
Urba Local Access	5	6	0.5	12	6.5	NA	8	6	NA	10	NA	NA	12

Components of the Street



	Sidewalk Zone	Buffer Zone[b,c]	Curb Zone	Opt. Shared Use Path[e,f]	Stormwater Management[g]	Curb Extensions[h] / Bus Bulbs[i]	Parking
	Center & Corridor CC1, CC2,						
Urban Principal Arterial	8	4	0.5	12	10	7	8
Urban Minor Arterial	8	4	0.5	12	10	7	8
Urban Major/Minor Collector	8	4	0.5	12	10	7	8
Urba Local Access	5	6	0.5	12	6.5	NA	8

Components of the Street

(Required)

VEHICLE REALM

(Recommended)

MEDIAN

Bicycle Zone[f]	Bicycle Buffer[k]	Vehicle Zone Outer Lane[l,m]	Vehicle Zone Inner Lane[l]	Vehicle Zone Left Turn or TWLTL	Median[n]
CC3, CC4					
6	2	11	11	10	2
6	2	11	11	10	2
6	2	11	11	10	2
6	NA	10	NA	NA	12

Street Design Standards

Industrial Standards

The City of Choice

Industrial Streets

- **What is an Industrial Street?**
- **How is it different from other streets?**
- **What design features improve its utility?**

Industrial Streets (City of Spokane)

The new draft of Street Design Standards includes some basic definitions of what we expect to include when building or rehabilitating streets through industrial land use zones.

These aspects are considered:

- Industrial streets are adjacent to Industrial Land Use Zones, but also along freight routes.
- Wider lanes, particularly approaching intersections and lane change areas.
- Attention to placement of bicycle and pedestrian facilities for visibility and safety. (No curb extensions requirement, wider buffers for bike lanes)

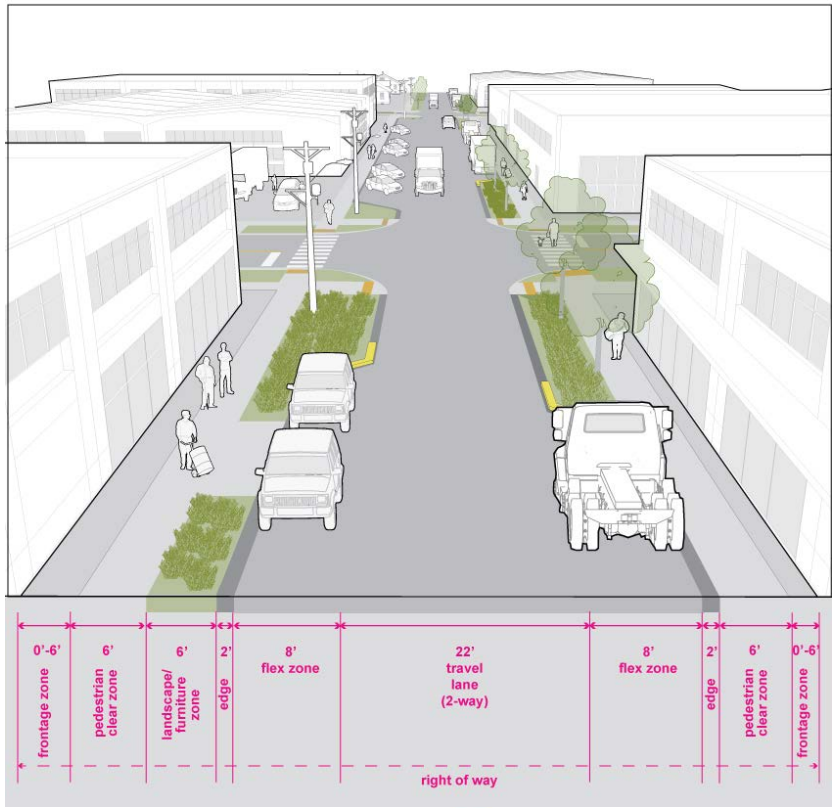
Industrial Streets (City of Spokane)

Industrial Routes

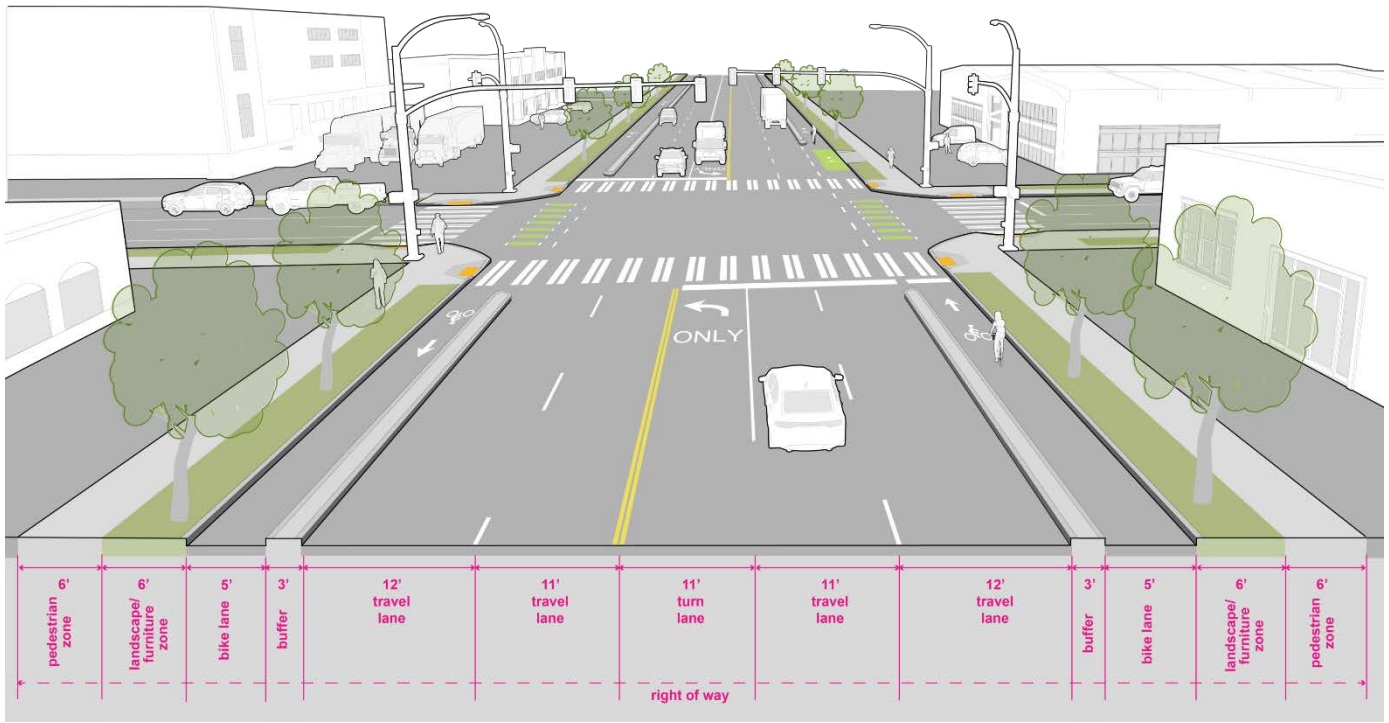
Industrial route streets serve the areas where industrial zoning is assigned. Freight routes, as planned for traversing the city, should also be considered Industrial despite other zoning such streets traverse. Due to the high percentage of larger commercial trucks, vehicle lanes are typically wider (11 to 12 feet) to provide sufficient space, which is most important approaching intersections where truck lane changes and turn movements require wider geometric layouts than passenger vehicles. These streets require special attention to factors such as pedestrian crossings, pedestrian visibility, and bicycle facility design to ensure corridors may balance industrial needs and multi-modal functions, particularly where industrial land uses are co-existent with pedestrian-generating facilities.

Seattle…

Minor Industrial Access



Industrial Access



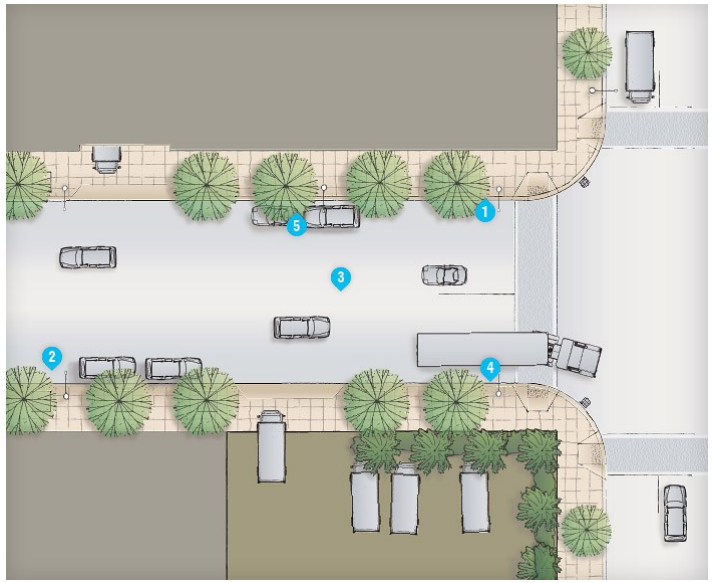
The City of Choice

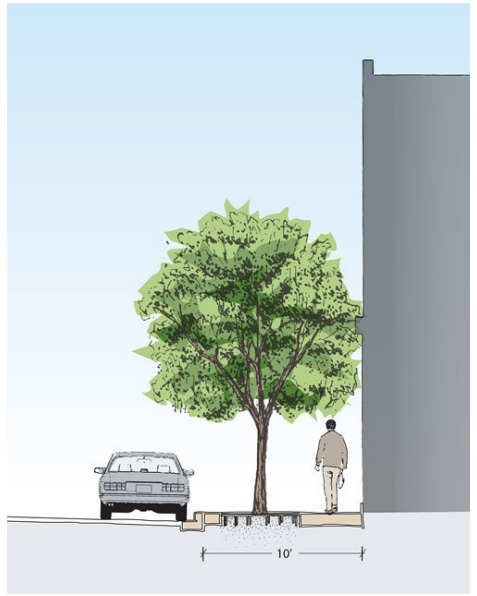
San Francisco…

Industrial streets are defined by large-scale production, distribution, and repair facilities that have an assortment of challenging impacts on streetscape character. These streets typically have a less active street frontage punctuated by large driveways, loading docks, and other auto-serving facilities, and front on wide streets that accommodate large trucks. Sidewalks and streetscape amenities are often minimal.

While these streets must serve heavy trucks and loading functions, they should also consider the pedestrian realm for workers and others passing through.

Industrial Street





Spokane County

3.18 CURBS, SIDEWALKS, AND PATHWAYS

1. **As part of any project all new and existing facilities shall be made to comply with current ADA Guidelines.** This is a requirement for all public and private roads within urban, commercial, and industrial land use zones, except special arterial section as approved per Section 3.03:

A. **Concrete curb and gutter shall be constructed on both sides of the road and sidewalk shall be constructed on one or both sides of the road** as directed by the County Engineer. This requirement applies to all new roads, roads to be reconstructed, or where there is a change in use of a commercial property. The County Engineer may require sidewalk and /or curb and gutter on one or both sides of the road in rural areas where pedestrian traffic can be expected to occur, including but not limited to arterial roads, commercial uses, industrial uses, schools, parks, churches, or shopping areas.

Urban Commercial Approaches

These approach standards are general in nature and pertain mainly to local access road situations. Arterials, railroad crossings, signalized intersections, channelization, and findings from a specific traffic analysis may result in superseding requirements. Refer to the Standard Plan entitled "Cement Concrete Approaches" for approach dimensions. **Where the existing curb, gutter, or sidewalk is not continuous along the road frontage, the Project Sponsor shall construct the missing improvements. Driveways and site development shall be arranged to allow vehicles to exit without backing out into the roadway. Driveways shall not be constructed, reconstructed, or altered to be within 30 feet of the end of a curb return for an intersection** or within 30 feet of a theoretical curb return end in standard location, if not present. **Driveway approach grades within right of way shall not exceed 8% (a rise or descent of 8 feet in 100 feet) in the urban area.** Drainage from private driveways that connect to public roads shall be controlled to prevent stormwater runoff from entering the public right-of-way. **The spacing between driveway approaches in the curb line of ownerships or leaseholds shall not be less than** ten feet for commercial uses nor less than **fifteen feet for industrial uses measured parallel with the frontage.** Shared approaches will be encouraged to access commercial local access roads and limit number of approaches on arterials.

Spokane County

Minimum Design Elements[1]	Classification	Industrial/Commercial		Residential				Private Roads[11]
	ADT	All		200 and Above		Below 200		All
	Construction	Curbed	Shoulder	Curbed	Shoulder [5]	Curbed	Shoulder	All
Design Speed (mph)	Flat Rolling Mountainous	35 30 25	35 30 25	30 30 25	30 30 25	25 25 20	30 30 20	25 25 20
Minimum Horizontal Curve Radius[2, 6] (ft)	Flat Rolling Mountainous	510 335 200	410 275 165	335 335 200	275 275 165	200 200 110	275 275 90	200 200 110
Superelevation Rate (%)	Maximum	--	2	--	2	--	2	--
Grade (%) [3]	Maximum Minimum	8 0.5	8 0.5	8 0.5	8 0.5	8 0.5	8 0.5	8 0.5
Stopping Sight Distance (ft)	Flat Rolling Mountainous	225 200 150	225 200 150	200 200 150	200 200 150	150 150 125	150 150 125	150 150 125
Intersection Sight Distance (ft)		AASHTO (latest edition)						
Crest Vertical Curves [4] (K)	Flat Rolling Mountainous	40 30 20	40 30 20	30 30 20	30 30 20	20 20 10	30 30 10	20 20 10
Sag Vertical Curves [4] (K)	Flat Rolling Mountainous	50 40 30	50 40 30	40 40 30	40 40 30	30 30 20	40 40 20	30 30 20
Roadway Width (ft) [7,8]	Minimum	40	40	29	29	29	24	29/24/20[12]
Intersection return radii (ft)	Minimum	30	30	20	20	20	20	20
Right of Way Width (ft)	See Section 3.08							

See next page for footnotes.

TABLE 3.08B
LOCAL ACCESS STREET DESIGN ELEMENTS

<u>City Standards:</u>

Design Speed by facility not terrain 20 – 35

Profile Grade %: Min = .8 Max = 8

Vertical Crest K = 10 – 167 to 80 – 167

Vertical Sag K = 20 – 167 to 70 – 167

Curb Radius: 20 – 25 ft at 15-20 mph

Street Design Standards

Schedule

The City of Choice

Schedule for Completion

Outreach Level	October					November				December				January					February				March				April				
	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5
Internal Engineering / Planning		X			X				X																						
All Ages and Abilities (AAA)							X				X																				
Industrial Standard								X																							
Development Community								X																							
Bicycle Advisory Board								X			X																				
Committees / General Public									X																						
Design Review									X			X																			
PCTS						X								X																	
Plan Commission																			X				X								
City Council																									X				X		