c. Lots facing a Major Local Street with only alley driveway access may be decreased in overall lot size and front yard building setback distance as specified in the Comprehensive Zoning Code's R-1, R-LT, and R-T zones.

~~8. Public right-of-way location for Primary Trails shall be as designated by the Long Range Bikeway System Map and the Trails and Bikeways Facility Plan. Primary, Secondary and Access Trails shall be built in accordance with the standards provided therein and/or the Subdivision Ordinance, the DPM, the Comprehensive On-Street Bicycle Plan, and Standard Specifications for Public Works Construction or as specified by adopted policies or plans. All new development and redevelopment shall follow the preceding requirements.~~

Comment [RMM1]: Replace with 3.6 – Bikeways and Trails

9. A Major Local Street generally accommodates vehicles collected from and distributed to several Normal and Access Local streets. Major Local Streets shall be designed to discourage high speed driving and to support walking:

a. Roundabouts at intersections, chokers, sidewalk bulb-outs, chicanes, medians, and/or other devices approved by the Traffic Engineer shall be incorporated into street design to calm traffic.

b. Residential Major Local Streets shall contain the following elements:

(1) No more than two (2) vehicle lanes (one in each direction) except at intersections with Collector or Arterial Streets where three (3) vehicle lanes may be provided: two (2) for vehicles exiting and one for vehicles entering the Major Local Street;

~~(2) Curb and gutter (on both sides of the street);~~

Comment [RMM2]: Replace with 3.4 Curb and Gutter Criteria

(3) On both sides of the street, minimum 6-foot wide areas for street trees between the back of the curb and the sidewalk that include the following areas: a 1-foot wide no-dig area back of the curb, another 2.5-foot wide area to the tree trunk to ensure that the tree is set back 4 feet from the face of the curb, another 1.5-foot wide area to ensure an adequately sized tree planting area, and a 1-foot wide no-dig area next to the sidewalk, although wider areas may be required for trees that attain a height greater than 20 feet at maturity;

(4) On both sides of the street, minimum 6-foot wide sidewalks or sidewalk substitutes in the form of all-weather surfaced paths that meet City Construction Standards and ADA Guidelines (The City requires a private maintenance agreement for sidewalk substitutes); and

(5) A minimum of one street tree per lot selected from a City approved list and as specified in the Street Tree Ordinance. Responsibility for permanent maintenance of street trees and related improvements shall be identified as a condition of final plat approval in a form acceptable to the City.

c. Major Local Streets may also contain some of the following elements:

(1) Parking lanes on one or both sides of the street as required by City Engineering staff to ensure adequate parking for adjacent land uses;

(2) If the street is also designated as a bikeway or trail, adequate right-of-way and developed section to accommodate the extra width in accordance with DPM/AASHTO standards;

(4) Right-of-way width requirements may be adjusted by the Traffic Engineer if necessary to properly accommodate existing right-of-way on the same street in the vicinity.

~~(5) Right-of-way and pavement widths may be increased by up to 12 feet by the Traffic Engineer to accommodate adopted bicycle facilities. Additional width may be required to accommodate required sidewalk and setback widths.~~

Comment [RMM3]: Replace with 3.6 – Bikeways and Trails

(6) See Standard Details

(7) Minimum sidewalk width shall be 10 feet on arterial streets adjacent to Major Activity Centers and Community Activity Centers as defined in the Albuquerque/Bernalillo County Comprehensive Plan. Minimum sidewalk width shall be 9 feet on collector streets adjacent to Major Activity Centers and Community Activity Centers. Minimum sidewalk width shall be six feet adjacent to arterial and collector streets other than those listed above. Minimum sidewalk width shall be 6 feet on local streets abutting the grounds of schools or churches, land zoned SU-3, or land zoned for a greater residential density than RT Residential Town homes. Otherwise, sidewalks shall be four feet wide adjacent to a local street. Right-of-way width shall be increased to accommodate increased sidewalk widths.

(8) Right-of-way shall be increased if required for public infrastructure.

(9) A developer, with the concurrence of the Traffic Engineer, may elect to dedicate additional R/W for future roadway widening.

(10) Right-of-way and pavement widths need to be increased within a specified distance of an arterial or collector street (measured as the tangent portion of the subject street). This width and required length of tangent is shown in brackets - ex. [56' X 100'].

(11) Width is measured from the gutter edge for a bike lane or from the edge of pavement for a shoulder bikeway toward the lane stripe or roadway centerline. On retrofit of existing roadways where right-of-way is limited, wide curb lanes, 16 feet from lane stripe to flowline, are recommended. In order to implement wide curb lanes, inner travel lane widths may be reduced within acceptable AASHTO guidelines.

(12) Pedestrian access routes shall be as described in 23.2.A.9.d. of the DPM:

"The centerlines of streets intersecting a major local street shall be a maximum of 850 feet apart provided additional pedestrian access routes to and from the Major Local Street are provided on the side(s) of the Major Local Street being considered for development.

Unless existing abutting development precludes providing an opening, pedestrian access routes shall be provided from between lots or from stub streets or cul-de-sacs.

(1) Minimum requirements for pedestrian access routes between lots are that they shall contain a minimum 6-foot wide path in a 12-foot wide space, shall meet ADA standards as required by law, and shall prevent vehicle entry. Access routes shall have no blind spots and access route exits shall be clearly visible from all points along the route. Pedestrian access routes longer than 120 feet shall be a minimum of 18 feet wide. (See 23.2.A.9.d.4. for exceptions.)

(2) Pedestrian street crossings associated with pedestrian access routes shall be evaluated for inclusion by City staff. If applicable, pedestrian street crossings shall include ADA accessible routes through street medians.

(3) On the side(s) of the Major Local Street with front yards facing the street, pedestrian access routes to the Major Local Street shall be located a maximum distance of 500 feet on center.

(4) On the side(s) of the Major Local Street with rear yards facing the street, pedestrian access routes that are a minimum of 25 feet wide shall be located a maximum distance of 500 feet on center. Pedestrian access routes narrower than 25 feet wide shall be located a maximum distance of 300 feet on center."

Table 23.2.1.B
Standard Local Residential Street Design - Public Right-of-Way and Pavement Width Standards

Street or Element Classification	***Required Total Right-of-Way (see notes: 5, 6, 7, 8, 11)***	***Recommended Bike Facility and Required Pedestrian Access Routes (see note 10)***	***Required Minimum Sidewalk (See notes 1, 3, 4)***	***Required Sidewalk Setback (see note 2, 11)***	***Required Pavement Width - Flowline to Flowline (See notes 8, 9)***
Major Local (A Residential Street with an anticipated AWDT of 1000 or more vehicles.)	Minimum total right- of-way includes the following basic elements:(5,7,8) (2) 6 ft wide sidewalks (2) 6 ft wide street tree planting areas between the curb and sidewalk ~~(2) curbs~~ (2) 12 ft wide traffic lanes Additional right-of- way may include: (2) added widths for planting areas to accommodate trees that are greater than 20 feet high at maturity (1 or 2) rear	A signed route without striped lanes. Minimum 6–foot wide paved paths within minimum 12-foot wide Pedestrian Access Routes between lots or from stub streets or cul-de- sacs (10)	6 feet (1, 3, 4)	Minimum 6 feet between the back of the curb and the sidewalk to include the following elements: (2,4) 1- foot wide no-dig area back of curb 2.5-foot wide area to the tree trunk An additional 1.5- foot wide area from the tree trunk to accommodate tree planting area A 1-foot wide no-dig area adjacent to the sidewalk The setback can be wider to	Minimum required pavement width = 22 - 24 feet to include two vehicle lanes.(8) Additional pavement width may include: (1 or 2) 8 ft wide parking lanes (1) minimum 10 foot wide or wider median (See note 9 concerning fire vehicle requirements) (1) additional vehicle lane for exiting to collector or arterial street

Comment [RMM4]: Replace with section 3.4 Curb & Gutter

	yard wall setback areas adjacent to walls higher than 5 feet from sidewalk grade (1 or 2) 8 ft wide parking lanes (1) 10 ft wide or wider median (1) additional vehicle lane at egress point to collector or arterial street ~~Additional 4 ft. for bicycle route~~			accommodate trees that grow higher than 20 feet at maturity. Trees require the following minimum planting areas to thrive. The areas described do not include the no-dig areas next to the curb and the sidewalk: 4 x 4 feet in a 6 foot wide area between the curb and sidewalk for street trees that grow to 20 feet high at maturity 5 x 5 feet in a 7 foot wide area between the curb and sidewalk for street trees that grow to 40 feet high at maturity A 6 x 6 feet in an 8 foot wide area between the curb and sidewalk for street trees that grow over 40 feet high at maturity	
a)Normal Local 1) wide lots 2) adjacent to special land	* 51 feet 61 feet	~~Can be a signed route without striped bicycle lanes~~	4 feet	Minimum 6 feet	1) Subdivisions, or major subsections thereof, with 90% of lot equal to or exceeding width of 55' – 30' (29' w/mt cb) 2) -Adjacent to schools -Within 150'

Comment [RMM5]: Replace with 3.6 – Bikeways and Trails

Comment [RMM6]: Replace with 3.6 – Bikeways and Trails

applicant responsible for indemnifying the City from any negligent actions by the applicant. There is a fee for recording this document with the County.

Walls or fences over 3' in height will not be approved within the right-of-way if the wall or fence will be less than 9' from face of curb on local streets and less than 10' from face of curb on arterial and collector streets. All walls or fences over 3' in height and within the right-of-way must be field checked by Traffic Engineering prior to approval. ~~Any walls or fences which are within the clear sight triangle are restricted to a height of 3' measured from the flowline of the gutter.~~

Comment [RMM12]: This information is now contained in section 3.9.5 Sight Distance

L. Railroad Crossings

The design and construction details for any Railroad Grade Crossing of public roadways, bikeways or sidewalk must be coordinated for acceptability by the railway owner. In some instances, the railway owner may require that work on their line and the crossing be performed by their own crews or contractor. Such requirements should be identified during the design phase of a project to ensure proper scheduling for construction. The location of any proposed crossing must also be reviewed and approved by the Traffic Engineer.

Rubberized crossing structures shall be installed on all new or rehabilitated railroad crossings on streets classified as collector or above in accordance with Standard Specifications and Standard Details.

M. Barricades at Ends of Pavement

A barricade will be required at the end of any street pavement within or at the limits of a project regardless of the class of street involved or how soon additional pavement will be placed beyond the current project limits. The only exception will be where the Traffic Engineer determines that the unpaved portion of the street beyond the project limits has been and will continue to be open to and used by through traffic. The installation of the barricade must be shown on the plans and included as a part of the street improvements. The contractor must notify Traffic Engineering three (3) working days in advance of the placement of any barricade, or completion of paving in the event a barricade is not required, so that the City can install proper warning signs as necessary.

~~**N. Bikeway Location and Design Guidelines**~~

Comment [RMM13]: Replace with 3.6 – Bikeways and Trails

~~***1. General Provisions***~~

~~a. Classes of bikeways may be defined as follows:~~

~~The American Association of State Highway and Transportation Officials (AASHTO) *1999 Guide for the Development of Bicycle Facilities* (or current revision) serves as the principal resource for the location and design of on-street and off-street bicycle facilities.~~

~~The guidelines presented in this section of the DPM primarily address the development of on-street bicycle facilities. All new roadways which are legal for bicycle use should be designed and constructed under the assumption that they will be used by bicyclists. The bikeway system referenced herein are defined in the *Albequerque Comprehensive On-Street Bicycle Plan*.~~

~~Final design approval of bicycle facilities developed through the use of these guidelines or through the use of other guidelines acceptable to the City of Albuquerque shall be through the authority of the Traffic Engineer or personnel delegated such authority by the Traffic Engineer.~~

~~Variances to the bicycle facility guidelines shall be considered on a case by case basis, based upon factors which demonstrate that public safety and current design standards are addressed. Variances shall require consultation with the City of Albuquerque Bicycle/Pedestrian Planner and approval by the Traffic Engineer.~~

~~a. Definitions of bicycle facilities and general design guidelines are listed in the following sections. Refer to the AASHTO *1999 Guide for the Development of Bicycle Facilities* for detailed design criteria.~~

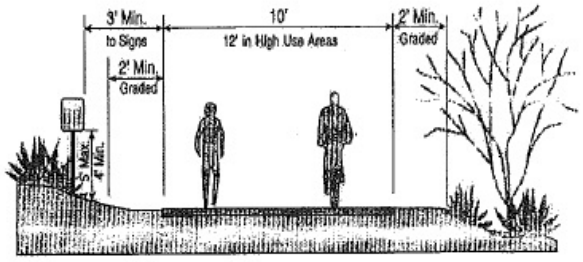
~~(1) SHARED USE PATH/TRAIL (BIKE TRAIL) A shared use path is a bikeway physically separated from motorized vehicle traffic by an open space or barrier, and constructed within the street right-of-way or within an independent right-of-way including shared use rights-of-way or utility or drainage easements.~~

~~Trails should be expected to accommodate other uses including walking, jogging, and rollerblading and should be designed to recommended standards for these uses. The recommended width for a trail is 10 feet, with 12 feet or more recommended in high use areas (See Figure 1). High use areas are those trails identified on the Long Range Bikeway System.~~

~~Trail design considerations include: signing; striping; markings; horizontal, vertical and intersection sight distance; surfacing; and trailside clear zones.~~

~~Where trails intersect with the street network, safe connections to the on-street bikeway system should be designed. Raised or protected median refuge areas should be considered for bicyclists at mid-block crossings of arterial roadways.~~

~~Traffic signal warrant analyses, per the *Manual on Uniform Traffic Control Devices(MUTCD)*, and other studies may be conducted for bike trail crossings of major roadways which have been identified as high priority bicycle and pedestrian crossings. See the references in Section N.5.a., b., and e. for evaluation considerations.~~



~~Figure 1~~
~~MULTI-USE TRAIL TYPICAL CROSS SECTION~~

~~(2) BICYCLE LANE (BIKE LANE) - A bike lane is a lane on the roadway that has been designated by striping, signing, and pavement markings for preferential or exclusive use by bicyclists. Bike lanes or paved shoulders are part of the standard arterial and collector cross-section. These lanes provide access to destinations that include parks, schools, shopping and employment centers. Bike lanes at signalized intersections should have bicycle-sensitive actuation capability such as loop detectors, video detection, curbside push buttons, or other detection devices approved by the City Traffic Engineer. Adequate sight distance shall be maintained at all intersections and driveways along a bike lane.~~

~~(a) Development of Bike Lanes on New or Reconstructed Roadways~~

~~Bike lanes should be provided on all new or reconstructed arterial and collector roadways. Recommended minimum widths for bicycle lanes are as follows:~~

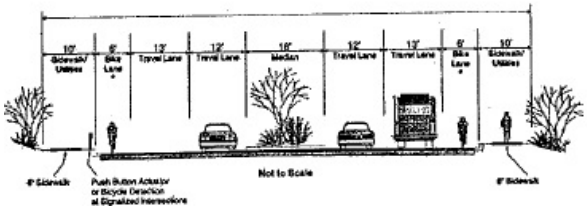
~~• 5 feet, measured from painted edgeline to edge of gutter, on roadways with posted speed limits of 40 mph or greater.~~

~~• 4 feet, measured from painted edgeline to edge of gutter, on roadways with posted speed limits of 35 mph or less.~~

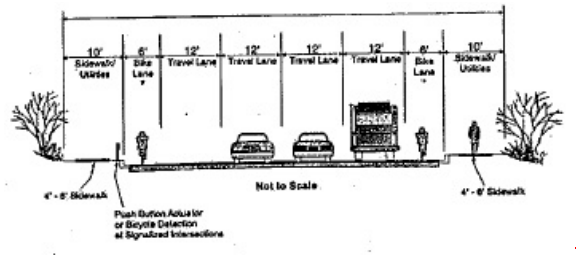
~~Bike lanes shall be flush with roadside gutters and should be marked in accordance with the MUTCD and AASHTO guidelines. (See Figure 2.)~~

~~Figure 2~~
~~MINOR ARTERIAL AND COLLECTOR ROADWAY TYPICAL CROSS SECTIONS~~

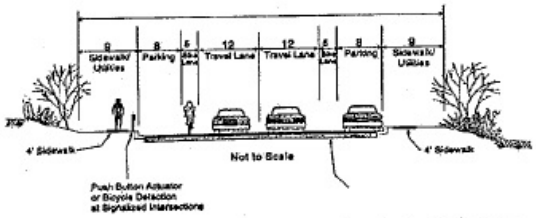
~~DIVIDED ROADWAY WITH BIKE LANES~~



~~FOUR-LANE ROADWAY WITH BIKE LANES~~



~~TWO-LANE COLLECTOR STREET WITH BIKE LANES~~



* Includes 2-foot gutter and AASHTO-standard 4' - 5' bike lane from edge of gutter to edge stripe.

NOTE: For retrofit of existing roadways to provide bike lanes, travel lane, median left-turn lane , and right-turn lane widths may be reduced within acceptable city standards.

~~Future roadway improvements should retain existing bike lanes, including intersection approaches where additional turn lanes may be constructed. Bike lane intersection design guidelines are provided in Sections N.4.a. of this chapter.~~

~~(b) Development of Bike Lanes on Existing Roadways~~

~~The addition of bike lanes as part of arterial and collector rehabilitation is recommended where feasible. Bike lanes may be implemented on existing roadways by reducing travel lane and median widths within acceptable City guidelines, as part of restriping, resurfacing, or rehabilitation projects. Narrower bike lanes may be considered where the inclusion of bike lanes in desirable, but standard widths are not feasible.~~

~~(c) Development of Bike Lanes with On-Street Parking~~

~~Bike lanes may be developed along arterial and collector roadways with or without on-street parking. Where on-street parking is present, bike lanes should always be located to the left of the parking lane and should have a minimum width of 5 feet. Bike lanes are travel lanes, therefore, automobile parking or motor vehicle use of a bike lane as a driving or passing lane should be prohibited. Parking demand should be evaluated to determine whether parking can be eliminated to reduce vehicle-bicycle conflicts or to convert the parking lane to a bike lane.~~

~~(3) PAVED SHOULDER BIKEWAYS – Paved shoulder bikeways are located on uncurbed arterials and collectors and consist of a smooth paved surface that covers all or part of the roadway shoulder. Recommended widths for paved shoulder bikeways are as follows:~~

~~• 6 feet, measured from painted edgeline to edge of pavement, on roadways with posted speed limits of 40 mph or greater.~~

~~• 5 feet, measured from painted edgeline to edge of pavement, on roadways with posted speed limits of 35 mph or below.~~

~~In addition, on low-speed, low-volume local streets, a 4-foot width may be considered where right-of-way constraints exist.~~

~~Paved shoulder bikeways may be implemented on existing roadways through use of measures similar to those described in Section N.1.a.(2.)(b). Intersection sight distance should be verified at all intersections and driveways along a paved shoulder bikeway.~~

~~(4) BICYCLE ROUTE (BIKE ROUTE) Bike routes are designated roadways with appropriate directional and informational signing, with or without a specific bicycle route number, in accordance with the MUTCD. Bicycle routes shall be primarily located on local streets and low-volume, low-speed collector streets.~~

~~Bicycle routes on local streets should have 28-foot wide pavement widths. A collector roadway should have a minimum curb lane width of 14 feet, exclusive of parking, and can be implemented with minor or no additional provisions.~~

~~(5) WIDE CURB LANES Wide curb lanes are located on shared roadways with outside lane widths of 14 to 16 feet. Lane widths greater than 16 feet may encourage operation of two motor vehicles in one lane, therefore, consideration should be given to striping a bicycle lane.~~

~~Wide curb lanes are recommended as part of rehabilitation and reconstruction projects on existing roadways where implementation of bicycle lanes or paved shoulder bikeways are infeasible. To implement wide curb lanes on existing roadways, travel lane widths and median widths may be reduced per City design guidelines and/or the curb and gutter may be reconstructed.~~

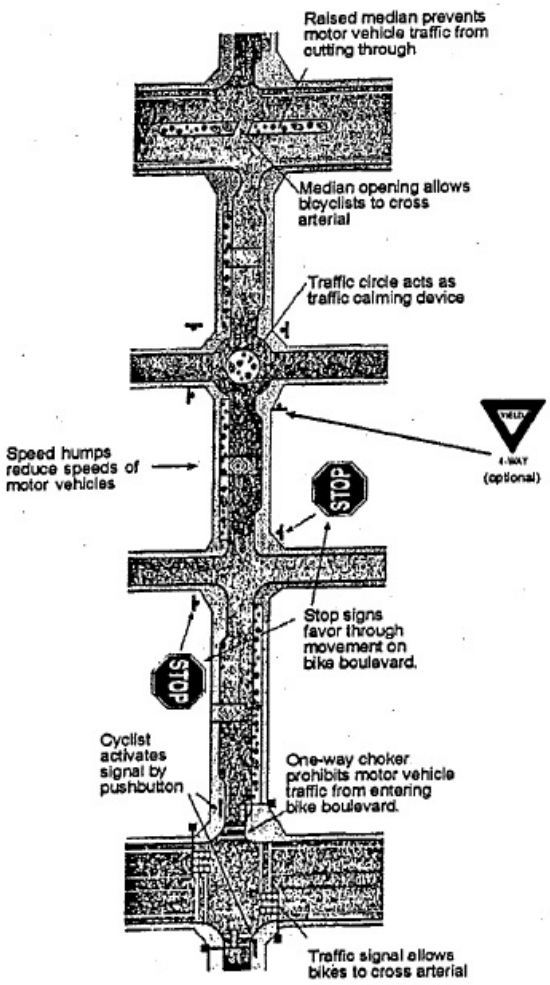
~~(6) SHARED ROADWAY A shared roadway is any roadway that may be legally used by both motor vehicles and bicycles and is not specifically designated as a bikeway.~~

~~(7) BIKEWAY A bikeway is any road, path, or way that is specifically designated for bicycle travel.~~

~~(8) BICYCLE FACILITIES Bicycle facilities are the infrastructure that accommodates or encourages bicycling including bikeways, shared roadways not specifically designated for bicycle use, bicycle parking and storage facilities, and bicycle signal actuation hardware.~~

~~(9) BICYCLE BOULEVARD (Modified Bike Route) A bike boulevard is a bike route designed to encourage the through movement of bicycles while maintaining local access for motor vehicle travel. (See Figure 3) Traffic calming devices are used to control motor vehicle speeds and discourage through vehicle trips. These devices may include diverters, speed humps, traffic circles, or pocket parks which allow through access by bicycles. A bicycle boulevard may be constructed with wide curb lanes or with standard travel lanes and bike lanes. Bicycle boulevards should limit bicycle stops to one per quarter-mile or preferably one per half-mile spacing. (Contact Albuquerque Public Works Department Neighborhood Traffic Management Program for additional traffic calming details.)~~

~~Figure 3~~
~~BICYCLE BOULEVARD~~



~~b. The bikeway system is intended to safely connect residential areas, employment, retail services, businesses, education centers, and recreational facilities. It is also intended to include recreational bikeways. Other elements of the bikeway system include the following:~~

~~(1) to provide safe bicycle facilities;~~

~~(2) to provide a system of bikeways interconnecting the four quadrants of the City and surrounding communities;~~

~~(3) to establish primary bikeways along routes with substantial bicycle commute volume;~~

(4) to provide a variety of bikeways which meet or exceed AASHTO or other approved State/Local guidelines;

(5) to provide extensions and connections to the existing network;

(6) to include provisions for bicycle transportation, commuting, and recreational travel associated with future development of arroyos, irrigation ditches, and drains;

(7) to provide for bicycle access to the bikeway system as expansion or modification of the metropolitan street system occurs;

(8) to provide for the safe crossing of bicycling barriers such as freeways, railroads, arroyos, acequias and the Rio Grande;

(9) to preserve and enhance existing bikeways on streets that change their traffic carrying function or are reconstructed;

(10) to achieve approximately one-half mile intervals between bikeways; and,

(11) to encourage frequent bicycle access between new developments and adjacent bikeways and to identify that access on the sketch plat, preliminary plat and/or site development plan as appropriate.

2. Off-Street Bicycle Facilities

a. Generally, Bike Trails should be located to serve corridors not served by streets and highways or where wide rights-of-way exist, permitting such facilities to be constructed away from the influence of parallel streets.

b. Bike Trails should provide either a recreational opportunity or serve as direct high-speed commute routes, if cross-flow by motor vehicles can be minimized.

c. In locating a Bike Trail, consideration should be given to the provision of adequate access points.

d. The scenic value is particularly important along a Bike Trail intended to serve a recreational purpose.

e. Recommended rights-of-way are:

(1) the arroyo (drainage) system coming from the mountains and from the uplands of the west mesa;

(2) the network of irrigation and drainage ditches in the valley;

(3) abandoned railroad rights-of-way;

(4) utility easements and rights-of-way; and

(5) paths through parklands.

(6) along roadways with sufficient R/W and appropriate design features.

~~***3. On-Street Bicycle Facilities***~~

~~a. Purpose~~

~~(1) On-street bikeways are designated as bike routes or bike lanes and are designed for transportation mobility.~~

~~(a) On-street bikeways emphasize functional service qualities such as the fastest, most direct, and unencumbered access to destinations.~~

~~b. General Bikeway Location Criteria~~

~~(1) Major on-street bikeways are located primarily along roadways classified as arterial or collector to provide access to destinations.~~

~~(2) Minor on-street bikeways, such as bike routes, are located on local streets and low-volume collectors to provide access between residential areas and major bikeways.~~

~~(3) It is desirable for bikeways to be located on roadways where on-street parking is infrequent, prohibited, or can be prohibited.~~

~~(4) High-speed traffic (posted speed of 40 mph or greater) and the presence of large vehicles (truck, bus, or recreational vehicle) are significant factors affecting the acceptability of potential bikeway locations. In locations where these conditions exist, bike lane widths of 5 feet or greater are recommended.~~

~~(5) An on-street bikeway should be located only where the pavement will be smooth and properly maintained. Dense-graded asphalt concrete surfaces are preferable to open-graded or seal-coated surfaces.~~

~~(a) Manhole and utility covers should not be located in bikeways, and where relocation is impractical, these features should be adjusted to grade.~~

~~(b) Drop inlet or other drainage grates should be designed to prevent the snagging of bicycle wheels.~~

~~(c) Construction joints or large transverse pavement surface cracks (greater than 1 inch in width) in on-street bikeways should be repaired.~~

~~(d) Pavement edges, including where the asphalt concrete roadway meets the Portland cement concrete gutter, should be flush to enhance bikeway safety. Gutters may be reduced (e.g., 1 foot), where drainage conditions permit, on new or reconstructed roadways to provide greater curb lane width for bicycling.~~

~~(6) In new residential or commercial developments adjacent to bikeways, contiguous walls or fences should provide breaks for paved bicycle access which link the development to the bikeway system. Access(es) should be delineated on the sketch plat, preliminary plat, and/or site development plan as appropriate.~~

~~(7) Potential on-street bikeway locations should include no more than one stop sign or traffic signal per 1/4 mile. Local street stop control should be reassigned to facilitate through bicycle traffic on designated bikeways. Stop control reassignment requires an engineering study~~

to determine additional measures necessary to minimize neighborhood impacts. Concurrently, traffic calming strategies for through motorized traffic should be analyzed.

c. Location Considerations for Bike Lanes

(1) Bike lanes should be located along arterial and collector roadways. Bike lane widths are a function of the posted speed limit and automobile volumes.

(2) Where automobile parking lanes are included within the roadway, the parking lanes and bike lanes should be delineated separately to prevent use of bike lanes by motor vehicles. Parking demand should be evaluated to determine whether parking can be eliminated or the parking lane can be converted into a bike lane. Bike lanes are traffic lanes, therefore, automobile parking or motor vehicle use of a bike lane as a driving or passing lane should be prohibited.

d. Location Considerations for Bike Routes

(1) Bicycle routes are primarily on low-volume, low-speed collectors and local streets. If adequate space is provided for a vehicle to safely pass a bicyclist, a bike route may be signed on an arterial.

(2) It may be necessary to sign a bike route for a short distance along an arterial with minimal 4-foot bicycle lanes, 5-foot paved shoulders, or a 10-foot multi-use sidewalk trail where local streets are not feasible to continue the bikeway. (See Section 4.c.(2) for additional information on design of sidewalks as multi-use trails.)

4. Special Provisions for Bikeway Facilities

a. Proposed facilities require a safety assessment of potential motor vehicle-bicycle conflicts. These conflicts are considered in four categories.

(1) Parallel Conflicts: Speed differential between automobiles and bicycles and the average daily volume of motor vehicle traffic reduce bikeway safety. Lower speed and lower volume roadways should produce less conflicts, resulting in safer bicycle travel.

(2) Right Turn Conflicts:

(a) Dual Right-Turn Lanes

Dual right-turn lanes on bikeways present safety concerns for cyclists traveling straight through an intersection. Warrants for dual right-turn lanes should be used to ensure that they are provided only where warranted. Intersections with dual right-turn lanes should be constructed in accordance with guidelines that minimize bicycle-automobile conflicts. All designs must be approved by the City Traffic Engineer.

(b) Free Right-Turn Lanes

Free right-turn lanes at intersections are not advised due to potential adverse impacts to bicyclist and pedestrian safety. Free right turns permit higher motor vehicle speeds approaching and through the right-turn movement. Where free right-turns are warranted, signing, marking, and geometric enhancements designed to warn motorists of pedestrian and bicycle traffic and to slow motor vehicles on approaches should be considered. These enhancements may include

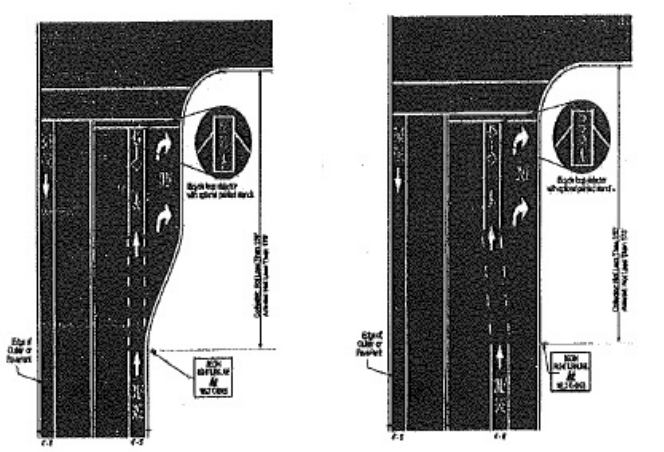
~~over-sized signing and marking, and reduced lane and turning radii widths for right turning vehicles.~~

~~(c) Separate Right Turn Lanes~~

~~Separate right-turn lanes should only be constructed where warranted by an engineering study. These lanes must be clearly signed and marked in accordance with the MUTCD. These lanes create bicycle-automobile conflicts because right-turning vehicles must cross the bikeway.~~

~~Where right-turn lanes are warranted, bicycle lanes and bicycle signal actuation systems should be provided at intersection approaches. Minimum curb return radii should be utilized to reduce motor vehicle speeds and reduce pedestrian crossing distances at intersections. (See Figure 4)~~

~~Figure 4~~
~~RIGHT TURN LANES~~



~~(d) Access Controlled Facility Right-Turn Access~~

~~Oversized signing and marking is recommended for bike lanes and bike routes at access ramps to access controlled roadways.~~

~~(3) Left Turn Conflicts: Where left turn phases are warranted at signalized intersections along a designated bikeway, left turn bicycle actuation via bicycle detection or median push button should be provided.~~

~~(4) Crossing Conflicts: Signalized intersections are a positive means of crossing a roadway. MUTCD pedestrian signal warrant analyses should be performed for unsignalized arterial crossings which serve as barriers within the continuous bikeway system. Raised median refuge islands that allow bicycle passage should be considered to improve the safety of unsignalized arterial crossings.~~

b. Bikeway Grades

Guidance for grade acceptability is a function of the slope and length of roadway grade. Bikeways with grades equal to or exceeding 5.0 percent for more than 500 feet are less desirable because the ascents may be difficult for bicyclists and the descents may cause bicyclists to exceed a comfortable speed. The table below summarizes the acceptability and design concerns for the bikeway types.

Bikeway Grades Greater than 5.0%

Bikeway Type	*Distance (Ft.)*	*Distance (Ft.)*	*Design Concerns*
Bike Trail	< 500	Good	30 mph design speed/12 foot width
Bike Trail	> 500	Poor	30 mph design speed/12 foot width
Bike Lane	< 500	Good	4 to 5 foot width (stripe to edge of gutter)
Bike Lane	> 500	Good	5 to 6 foot width (stripe to edge of gutter)
Bike Route	< 500	Good	Good sight distance, advance warning of traffic control
Bike Route	> 500	Poor	Consider alternate location or provide good sight distance, advance warning of traffic control

c. The crossing of physical barriers is an important factor in providing bikeway continuity and increasing bike usage. Two primary barriers are the Rio Grande and access controlled highways. Railroad tracks, arterial crossings, and large tracts of land not allowing through access are also barriers. Three solutions to provide safe crossing of major transportation barriers include the following:

(1) A bike lane may be created on an existing arterial through restriping, reducing vehicle travel lane or median widths.

(2) The sidewalk may be designated as a legal trail for short distances of up to one quarter mile to serve as a linkage within the bikeway network. Two way bicycle traffic as well as pedestrian traffic should be expected on sidewalks under these conditions. Sidewalk trails should be designed per Section N.1.a.(1) and this section to safely accommodate both pedestrian and bicycle traffic.

Driveways and cross streets should be limited to 4 or less per quarter mile before sidewalk trails are implemented. If the distance between the sidewalk trail and roadway is less than 5 feet, a physical divider should be considered.

~~Sidewalk bikeways or trails immediately adjacent to the roadway are not recommended. This is due to several factors including wrong-way travel by bicyclists, conflicts at intersections and driveways, insufficient sight distance due to walls and other obstructions, and conflicts within the right-of-way such as utility poles.~~

~~(3) All new or reconstructed roadway over-passes should include wide curb lanes, multi-use emergency breakdown lanes, or bike lanes to improve bicyclist and motorist safety. Cantilevered structures attached to existing bridges should be considered where widening is not cost effective.~~

~~d. Construction within Right-of-Way~~

~~If construction or utility work is necessary within a bike lane, the full width of the bike lane should be repaved to grade after work is complete. Safe detour provisions for bicyclists should be made when bike lanes are temporarily closed for utility work.~~

~~***5. Planning and Design Guideline References***~~

~~a. *Albuquerque Comprehensive On-Street Bicycle Plan*. City of Albuquerque, 2000.~~

~~b. *Guide for the Development of Bicycle Facilities*. American Association of State Highway and Transportation Officials, 1999.~~

~~c. *Manual on Uniform Traffic Control Devices*. Federal Highway Administration, 1988 (including current adopted amendments).~~

~~d. *Selecting Roadway Design Treatments to Accommodate Bicycles*. Federal Highway Administration, 1994.~~

~~e. *New Mexico Bicycle-Pedestrian-Equestrian Transportation Plan*. Bicycle/Pedestrian/Equestrian Advisory Committee, New Mexico State Highway and Transportation Department, 1996.~~

~~f. *Trails and Bikeways Facility Plan*. City of Albuquerque, 1996 (Revised).~~

~~g. *Pedestrian and Bicyclist Safety and Accommodation*. National Highway Institute, Federal Highway Administration, 1996.~~

~~h. *Oregon Bicycle and Pedestrian Plan*. Oregon Department of Transportation, 1995.~~

~~i. *Neighborhood Traffic Management Standards*. Albuquerque Public Works Department.~~

~~Appendix A~~
~~Advantages of Bicycle Lanes/Paved Shoulders~~

~~1. Improved space is provided for bicycle use and in limited cases for pedestrian use; safety is improved for motorists who will not have to travel out of the lane in order to pass bicyclists.~~

~~2. Improved space is provided for motor vehicles to stop out of the travel lane because of mechanical difficulty, a flat tire, or other emergency.~~

~~3. Improved space is provided to escape potential accidents or reduce their severity.~~

4. Improved space is provided for emergency vehicle access through congested areas as motorists pull to the curb to allow emergency vehicles to pass.

5. The sense of openness created by bike lanes/paved shoulders improves the safety and drivability of the roadway.

6. Sight distance is improved both for users traveling along the roadway with bike lanes/paved shoulders as well as for users entering the roadway from a side street or driveway.

7. Highway capacity is improved; uniform speed is encouraged.

8. Improved space is provided for maintenance work such as snow removal and maintenance of utilities.

9. Improved space is provided for motorists who have accidentally left the travel lane to recover and return to the lane.

10. Improved space is provided to discharge stormwater from the travel lanes, increasing safety for users and capacity of the roadway.

11. Pavement life is increased because structural support is given to the pavement, reducing the raveling effect caused by motor vehicles traveling on the edge of pavement or traveling immediately adjacent to the gutter pan.

12. Improved space is provided for bus stops.

13. Increased safety is provided for right-turning vehicles due to increased turning radii at intersections and driveways; rear-end accident potential is reduced.

14. Increased safety is provided for motorists to avoid fixed objects such as telephone and signal poles due to provision of additional clear zone area.

15. Improved space is provided by paved shoulders for motorists to pass on the right of left-turning vehicles, where allowed by law.

16. Air quality benefits are provided due to provision of space for alternative modes of travel and to reduced particulate matter caused by vehicles traveling on unpaved shoulders.

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a. Classes of bikeways may be defined as follows:

(1) Class I Bikeway: A Bike Trail located in a completely separated right-of-way designated by signs and pavement markings for the exclusive use of bicycles with cross flows by

~~the motor vehicles minimized. The right-of-way for these bikeways could accommodate other uses such as hiking and jogging if properly designed.~~

~~(2) Class II Bikeway: A Bike Lane that is located in a portion of the roadway designated by signs and pavement markings for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross flows by pedestrians and motorists permitted.~~

~~(3) Class III Bikeway: A Bike Route located in a roadway and designated by signs and shared with pedestrians or motorists. The bike route provides continuity to other bicycle facilities.~~

~~b. The Bikeway Network is intended to safely connect residential areas, employment, retail services, businesses education centers and recreational facilities. It is also intended to include recreational bikeways. Other elements of the Bikeway Network concept include the following:~~

~~(1) safety;~~

~~(2) to provide a system of bikeways interconnecting the four quadrants of the City and surrounding areas;~~

~~(3) to establish primary bikeways along patterns of heavy bicycle commuting;~~

~~(4) to provide a variety of bikeways for study and experimentation;~~

~~(5) to provide extensions and connections to the existing network;~~

~~(6) to include provisions for bicycle transportation and recreation associated with further development of arroyos, irrigation ditches, and drains;~~

~~(7) to provide for bicycle access to the Bikeway Network along with further expansion or modification of the metropolitan street system;~~

~~(8) to provide for the safe crossing of bicycling barriers, such as freeways, railroads and the river;~~

~~(9) to provide for relocation of Bikeways if necessary where any street changes significantly in its traffic carrying function; and~~

~~(10) to achieve approximately one-mile intervals between bike facilities.~~

~~c. The Bikeways Master Plan is a graphic representation of an updated version of the Bicycle Network established in 1974. The Master Plan identifies the locations, alignments, connections and type of bicycle facilities for the Albuquerque Urban Area. The status of program priorities for bicycle facility development is identified in the following categories:~~

~~(1) Existing bicycle facilities that are currently in operation.~~

~~(2) Planned bicycle facilities that either are included in the Transportation Improvement Program for the Albuquerque Urban Area or are expected to be developed along with associate roadways, drainageways or as funds become available.~~

(3) Study corridors where bicycle facility type and alignment have not been established but are under consideration.

(4) Existing or planned major grade separated overcrossings.

2. Off Street Bicycle Facilities

a. Generally, Bike Trails should be located to serve corridors not served by streets and highways or where wide rights-of-way exist, permitting such facilities to be constructed away from the influence of parallel streets.

b. Bike Trails should provide either a recreational opportunity or serve as direct high-speed commute routes, if cross-flow by motor vehicles can be minimized.

c. In locating a Bike Trail, consideration should be given to the provision of adequate access points.

d. The scenic value is particularly important along a Bike Trail intended to serve a recreational purpose.

e. Recommended rights-of-way are:

(1) the arroyo (drainage) system coming from the mountains and from the uplands of the west mesa;

(2) the network of irrigation and drainage ditches in the valley;

(3) abandoned railroad rights-of-way;

(4) utility easements and rights-of-way; and

(5) paths through parklands.

(6) along roadways with sufficient R/W and appropriate design features.

3. On-Street Bicycle Facilities

a. General Locational Criteria are as follows:

(1) The on-street bikeways are designated as Bike Routes or Bike Lanes and are primarily designed for transportation purposes.

(2) These types of bicycle facilities generally emphasize functional service qualities such as the quickest, most direct, and unencumbered access to most destinations.

(3) It is desirable to select a location where on-street parking is light or where it can be prohibited.

(4) High-speed traffic and/or truck, bus, and recreational vehicle traffic are significant factors affecting the acceptability of potential bikeway locations. In locations where these vehicles and bicycles must share a right-of-way, extra separation must be available between cyclists and vehicles.

(5) An on-street bikeway should be located only where pavement can be maintained at a reasonable standard. Dense graded asphalt concrete surfaces are preferable to open graded or seal coated surfaces. All manhole covers, utility covers, drop inlet grates, and construction joints or cracks in the surface should be at grade or brought to grade and safety standards before establishing a bikeway.

(6) For an on-street bikeway, the speed and volume of auto traffic is a factor, along with the available width, in determining the best location. Areas where mixed flows may be acceptable are:

(a) In urban centers where traffic conditions constrain motor vehicle speeds to be less than 40 mph resulting in considerable overlap of bicyclist and motor vehicle speed distributions;

(b) Within the approaches to intersections where motor vehicle speed is depressed preparatory to stops, turning movements and intersection related decisions;

(c) On streets with less than 14,000 average daily traffic volumes.

(7) Potential on-street bikeway locations should include no more than one stop sign or traffic signal per 1/4 to 1/2 mile intervals. Stop signs should be rearranged to the extent possible to permit through bicycle traffic. At the same time, deterrents to motorized through traffic should be implemented.

b. Locational considerations for Bike Lanes include the following:

(1) Adequate pavement width must be available for both bicycles and motor vehicles.

(2) A location should be able to provide a minimum of four feet of operating width for one-way bicycle travel, exclusive of the gutter width.

(3) Bike Lanes should be placed primarily on collector streets.

(4) At locations where on-street parking is allowed to remain, the adjacent Bike Lane should be wide enough to permit a bicyclist to pass a parked car.

(5) Bike Lanes, if necessary, may be placed on arterials where the center divider can be reconstructed and the traffic lanes moved in toward the center.

(6) Bike lanes may be placed on Principal Arterials on shoulder areas when appropriately designed.

c. Locational considerations for Bike Routes include the following:

(1) Local streets in the Bikeway Network should be designated as Bike Routes.

(2) Bike Routes may be placed where bicycle traffic is already heavy and where other bicycle facilities are not feasible.

(3) Arterials should be avoided if at all possible; however, it may be necessary to use arterials when other bicycle facilities are not feasible.

4. Special Provisions for Bikeways

a. Each proposed and existing facility should be evaluated on a safety basis of potential motor vehicle-bicycle conflicts, as categorized into four categories:

(1) Parallel Conflicts: Close proximity of auto and bike travel, speed differential between the two, and the average daily volume of motor vehicle traffic.

(2) Right Turn Conflicts: An unchannelized intersection presents relatively minor problems for cyclists; a double right-turn lane presents unacceptable hazards.

(3) Left Turn Conflicts: Intersections with left-turn phase signalization present no hazards and should be highly rated. Signalized intersections, without separate phasing should be on the basis of turning volume and opposing traffic, as should major unsignalized intersections and driveways on major streets.

(4) Crossing Conflicts: Signalized intersections are the most positive means of dealing with crossing traffic and should therefore be highly rated for safety. Any location which controls cross traffic by STOP or YIELD signs is also relatively safe.

b. Grade acceptability is judged in terms of the slope and length of the grade. A general standard to apply is that a grade of 10 percent would be tolerable for a distance of 50 feet or less. Also, grades of five percent, for a length of 150 feet and longer, should be avoided.

c. The breaching of barriers may be one of the most important factors in providing continuity and increasing bike usage. The two most obvious physical barriers locally are the Rio Grande and the Interstate Highways. Three possibilities for safe bicycling crossings are recommended:

(1) A Bike Lane may be marked on the roadway. This criterion would not apply in those instances where insufficient roadway would result in decreasing the number of required motorized vehicle lanes.

(2) The sidewalk may be designated as a legal Bike Lane. Although bicycles and pedestrians generally do not mix well, the short distance of mixed use in this case is a mitigating factor. If sidewalks are used, then curb cuts and on and off ramps must be provided, and sidewalks should be screened to protect bicyclists from automobiles and to prevent the rider from toppling over a low railing into the freeway or river below.

(3) Even in its safest form, a Bike Lane on a highway bridge forces the cyclist onto a busy street. A far better solution is to have a completely separate bridge for non-motorized traffic.

5. References:

- Copeland, Roy Jr. Bikeway Design Data Manual, New Mexico State Highway Department, 1976.

- Guide for the Development of New Bicycle Facilities. American Association of State Highway and Transportation Officials, 1981.

- New Mexico State Trails Handbook. New Mexico Park & Recreation Commission, 1974.

- Smith, D. T. Jr. Safety and Locational Criteria for Bicycle Facilities, User Manual Volume I Bicycle Facility Location Criteria. Federal Highway Administration, U. S. Department of Transportation, 1976.

- The Bikeway Study. Ad Hoc Bikeway Advisory Committee, Albuquerque, New Mexico, 1974.

- The City of Albuquerque Subdivision Ordinance. Albuquerque Planning Department, 1979.

Guide For Development of New Bicycle Facilities, AASHTO, 1981 or latest.

Section 6. CURB CUTS AND DRIVEPADS

* Indicates regulation as established by Curb Cut Ordinance Article 8-13 R.O.A. 1994

A. Residential Curb Cut Requirements

This section applies to applications for curb cuts for single family, townhouse and duplex residences with individual lots.

1. Private driveway access to single family lots is not permitted on principal arterial, minor arterial, or collector streets. Access to single family lots is discouraged on major local streets.

2. *The width of drive allowed is 12-22' - Exceptions: 3 Car Garage, Parking of Recreation Vehicle or Boat off-street. Verification is needed for these exceptions. The drivepad can then be increased to 30' in width.

3. Common Drives - This is a common entrance area from the curb to the back of sidewalk. The driveways can be separated beyond the back edge of the sidewalk. The width allowed is up to 40' total. A letter of concurrence, signed by both property owners, needs to be provided prior to issuance of the permit.

4. Townhouses - For very small lots (40' frontage or less), the drives should be located such that drives are common for two lots, leaving some on-street parking area.

5. *The minimum distance between two drives on one lot is 22' of full height curb (6' is necessary for two curb height transitions for a total of 28' between the two drivepads).

6. *The minimum distance (for other than common drives) from the property line is 5-1/2' (3' transition + 2-1/2' separation to the property line). This can be reduced to 3' if:

   a. the drivepad for the adjacent lot is on the other side of the lot, and

   b. the owner presents a letter from the adjacent property owner agreeing to this reduction.

Drivepad Nomenclature