

PLANNING COMMISSION

Meeting Date: 06/17/2024

ADDITIONAL ITEM ADDED AFTER DISTRIBUTION OF PACKET (#2)

AGENDA ITEM # 4

Applicant/Project Name: Pacific Specific Plan

Project Number: SP22-0001, GPA21-0002, R21-0002, MFSDP24-0001,
TSM24-0001.

Brief Description: Comments from North County Transit District and supporting documents regarding new bus shelter and bus bench for future development.

Date 06/17/2024

Time 10:45 a.m.

From: [Chris Garcia](#)
To: [Mary Balderrama](#)
Cc: [Ioni Tcholakova](#)
Subject: RE: The Lasa Posas / Las Posas Rd & La Mirada Dr Bus Stop
Date: Monday, June 17, 2024 10:22:37 AM
Attachments: [image003.png](#)

Mary,

Thank you for the information. Resolution No. 24-5109 for the Multi-Family Site Development Plan (MFSDP), states that prior to issuance of any grading permit, the applicant/developer shall comply with Condition B.21: A North County Transit District (NCTD) bus shelter and bus bench shall be designed on Las Posas Road as shown on the tentative map. The plans shall depict details such as the bench, bus shelter, solar lighting, and trash can. **The design shall be approved by NCTD**, the City Engineer, and the Planning Division Director.

I will share the information provided with the applicant and coordinate with NCTD on the design once the project applies for grading permits.

Sincerely,



Chris Garcia | Senior Planner

City of San Marcos | 1 Civic Center Drive, San Marcos CA 92069

T: (760) 744-1050, ext. 3237

cgarcia@san-marcos.net | www.san-marcos.net

From: Mary Balderrama <mbalderrama@nctd.org>

Sent: Monday, June 17, 2024 10:00 AM

To: Chris Garcia <cgarcia@san-marcos.net>

Cc: Ioni Tcholakova <itcholakova@nctd.org>; Sean del Solar <SdelSolar@san-marcos.net>

Subject: The Lasa Posas / Las Posas Rd & La Mirada Dr Bus Stop

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Chris,

We received notice for the Las Posas project. Please see the attached correspondence, and copy of our handbook and current shelter standard for your reference. Please let me know when would be a good time for a meeting between the developer and NCTD staff as the project progresses so that this bus stop can be improved and better serve future users of the development!

Thank you!

Have a good week,

Mary Balderrama

Transit Planner

North County Transit District | 810 Mission Avenue, Oceanside, CA 92054

mbalderrama@nctd.org | planning@nctd.org | 760.966.6569 | GoNCTD.com



Received by



JUN 11 2024

North County Transit District

NOTICE OF PUBLIC HEARING (Planning Commission)

The Planning Commission of the City of San Marcos will hold the following public hearing in the City Council Chambers located at San Marcos City Hall, 1 Civic Center Drive, San Marcos, CA 92069 at 6:30 p.m., on Monday, June 17, 2024.

Project No: SP22-0001, GPA21-0002, R21-0002, MFSDP24-0001, TSM24-0001, EIR23-003

Applicant: The Las Posas Owner LPV, LLC

Request: Request for a Specific Plan, General Plan Amendment, Rezone, Multi-Family Site Development Plan, and a Tentative Subdivision map for a 228-unit residential development on an existing 33.2-acre vacant lot.

Environmental Determination: Environmental Impact Report (EIR24-0002 / SCH No. 2022050650) was prepared pursuant to the California Environmental Quality Act (CEQA).

Location of Property: A 33.2-acre vacant site located bounded by Pacific Street, La Mirada Drive, Las Posas Road, and Linda Vista Drive, more particularly described as Lots 1, 2, 3 and 4 in Block 113 of Rancho Los Vallecitos De San Marcos, in the City of San Marcos, County of San Diego, State of California, according to the map thereof No. 806, filed in the Office of the County Recorder of San Diego County, December 21, 1895. Assessor's Parcel No(s).: 219-222-01-00, 219-222-02-00, 219-222-03-00, 219-222-04-00.

Further information about this notice can be obtained from Chris Garcia, Senior Planner, at 760-744-1050 extension 3237, or cgarcia@san-marcos.net.

The City of San Marcos is committed to making its programs, services and activities accessible to individuals with disabilities. If you require accommodation to participate in this public hearing or any other City program, service or activity, please contact the City Clerk's office at 1 Civic Center Drive, San Marcos CA 92069, or call (760) 744-1050, Extension 3186.

Vicinity Map:



www.san-marcos.net



NCTD
810 MISSION AVE
OCEANSIDE, CA 92054

810 Mission Avenue
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(760) 966-6500
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May 27, 2022

Ms. Susie Neveu
Engineering
City of San Marcos
1 Civic Center Drive
San Marcos, CA 92069
Sent Via Electronic Mail: sneveu@san-marcos.net

Re: The Las Posas #219-222-01, 02, 03, & 04

Dear Ms. Neveu:

Thank you for the opportunity to review the Las Posas project #219-222-01, 02, 03, & 04, located on the northwest corner of Las Posas Road and Linda Vista Drive, based on the details received on May 9, 2022.

Upon review of the notice received by the North County Transit District (NCTD), NCTD has determined that BREEZE Routes 347 and 445 serve the site. There is a bus stop (ID: 22524 Las Posas Rd & La Mirada Dr) at the project site. The site plans do not appear to acknowledge this stop. NCTD recommends the construction of one (1) five-foot by eight-foot ADA-compliant bus stop pad for passenger boarding.

The design should be consistent with NCTD standards and include the following:

- An eight-foot-deep by five-foot-wide concrete boarding and alighting area that meets standards set forth by the Americans with Disabilities Act (ADA)
- Construction of lighting, trash, seating, and a shelter

Detours Required:

Upon review of the notice received by NCTD, NCTD has determined that while there are no bus stops in the vicinity of the project, the construction may take place in the right-of-way of NCTD BREEZE Routes 347 and 445.

NCTD requests that you or your contractor provide notice two (2) weeks prior to starting work so that we may send a supervisor to meet with your construction crew to determine if your traffic control methods affect NCTD's stops. Notice should be provided via e-mail to detours@nctd.org.

TOD/Pedestrian:

NCTD highly recommends that the project site design allow for sufficient ADA paths for connecting pedestrians from within your future development to access nearby bus stops, sidewalks, and crosswalks. To make your development pedestrian and bike friendly, NCTD highly encourages you to provide shading from trees or structures, lighting, bike racks, and seating.

As described in NCTD's Bus Stop Development Handbook (2018), new developments should be designed to provide clear and direct access to bus stops (existing or new), and should emphasize pedestrian access, activity, and safety:

- Gated or walled developments should provide openings through walls to minimize the walking distance and provide a more direct route to bus stops.
- Developments with parking lots should be designed with clear pedestrian walkways.
- Distinct walkway networks should be provided where bus stops and/or transit centers can be linked with building entrances.
- Entrances to buildings should face the street with pedestrian access located close to the nearest bus stop.

Below is a sample of Guidelines for design supported by NCTD, as found in our Bus Stop Development Handbook (2018):

Key Transit Supportive Design and Development Guidelines Supported by NCTD
Orient developments towards the street, with parking located to the rear of buildings rather than along the street frontage.
Building design and circulation plans should minimize the need for parking and increase the opportunity for transit and active transportation.
Bus stop and station elements should be incorporated into the design, in addition to other public spaces like walkways, bicycle paths, and street furniture.
Emphasize compatible and compact land uses that enable convenient access to and from bus routes, and that are designed to provide connections to a variety of uses (i.e. residential, employment, educational, and commercial).
Minimize walk distances through developments to bus stops, especially those with walls or gates, so that transit is accessible to most patrons or residents.

Supporting transit elements is essential for the City of San Marcos to meet its goals and objectives described in the City's Climate Action Plan. This aligns with Policy LU-2.1: *"Promote compact development patterns that reduce air pollution and*

Re: The Las Posas #219-222-01, 02, 03, & 04

May 27, 2022

Page 3 of 3

automobile dependence and facilitate walking, bicycling, and transit use" for the city goal to "Promote development standards and land use patterns that encourage long-term environmental sustainability" (pg. 1-8). Other supported goals include increasing transit ridership, reducing greenhouse gas emissions (GHG), and decrease Vehicle Miles Travelled (VMT) (pg. 1-8, 3-9).

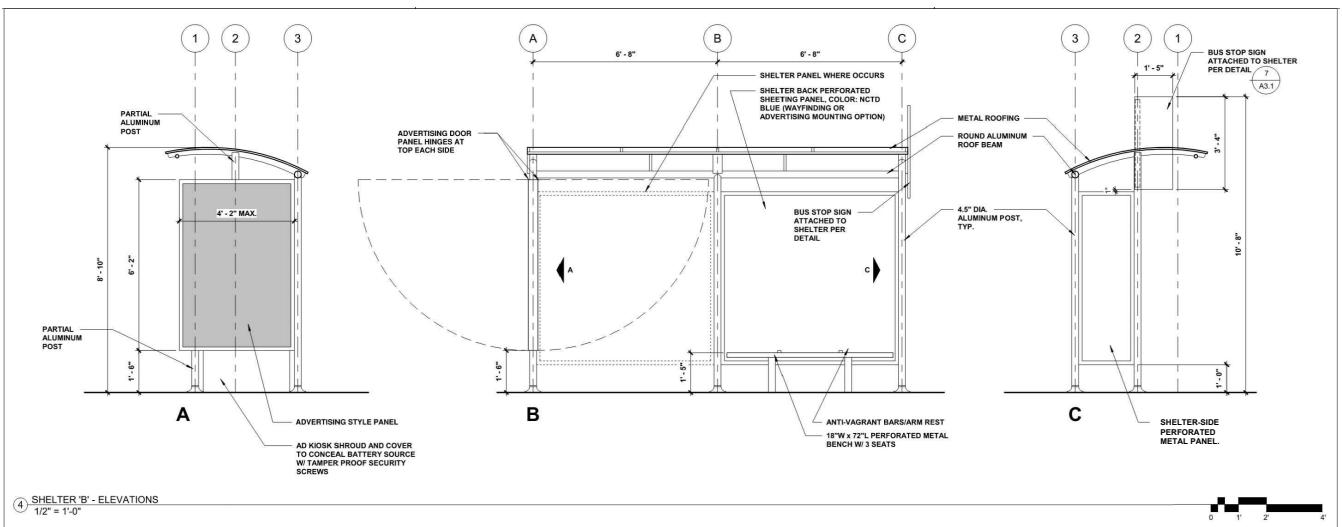
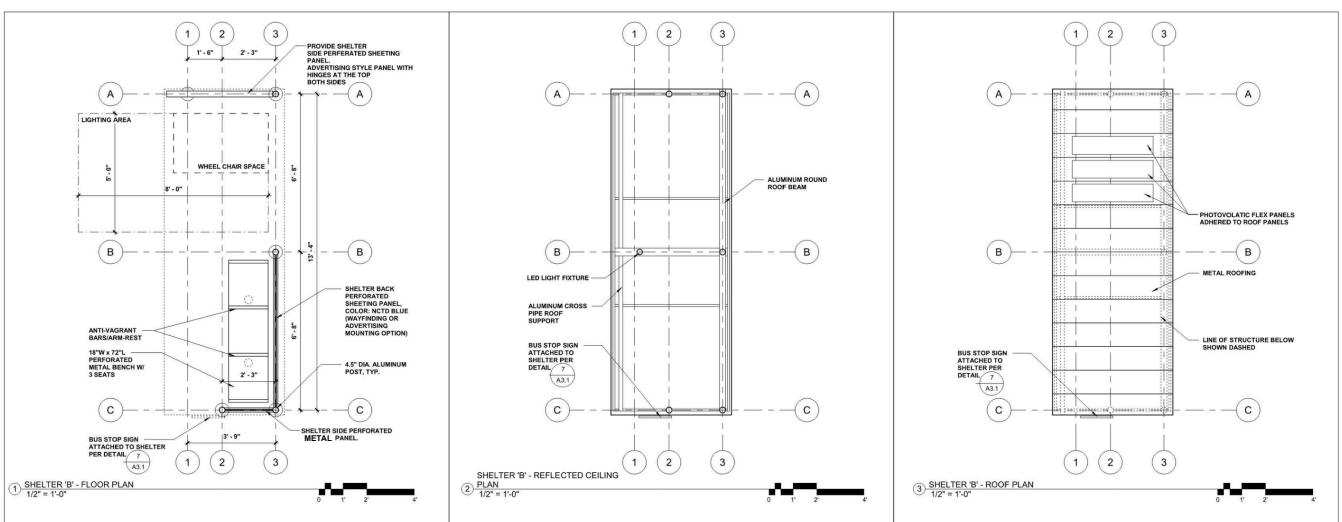
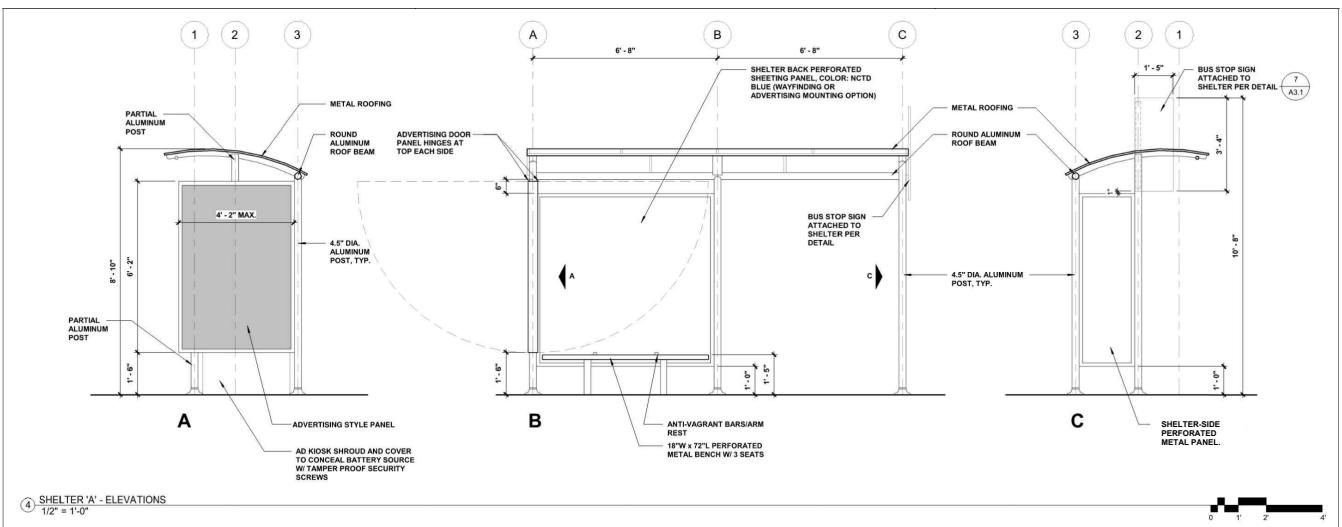
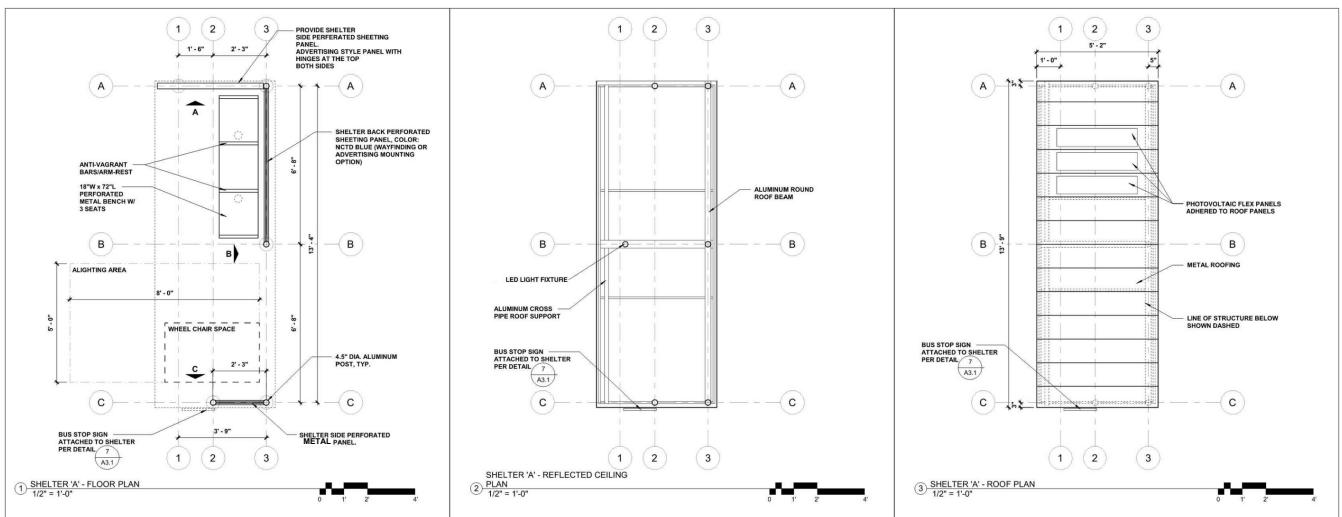
Thank you again for allowing NCTD to review and comment on this project. Should you have any questions related to this review, feel free to contact me via e-mail at kpersons@nctd.org or by phone at (760) 966-6683.

Sincerely,



Katie Persons
Director of Service Planning

cc: Chris Orlando, Chief of Planning, Marketing & Communications, NCTD
Damon Blythe, Chief Operations Officer – Bus, NCTD
Ioni Tcholakova, Transit Planner, NCTD
Mary Balderrama, Transit Planner, NCTD





Bus Stop Development Handbook

March 2018

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1.0 Introduction

This guidebook has been designed to help planners, developers, architects, and engineers understand the physical requirements of public transportation and to provide a uniform guide for the design and placement of various bus-related facilities and amenities. The transit system's stops and facilities are an important feature of the transit system, as they provide the "first impression" for customers. Additionally, when done correctly, proper stop and amenity placement throughout the service area helps to improve customer satisfaction as well as encourage the use of the transit system and, in turn, help communities achieve established sustainability goals and improve the overall quality of life.

The guidelines provided in this document are consistent with North County Transit District's (NCTD) policies to ensure that public transportation is included as a part of the early stages of the planning process. Coordination between public transit and land development at the beginning of the planning process can prevent the need for costly, less effective modifications later on, as well as ensure that safety considerations and transit customer needs reflected in the design.

We have included specific design standards for public transportation facilities and vehicles. These guidelines were developed primarily for application in areas where new bus transit services are proposed or where modifications or improvements to existing service are necessary to facilitate safe and efficient bus operations, in addition to a safe and comfortable environment for passengers and adequate pedestrian and bicycle facilities. Overall, these guidelines consider the transit system as a whole, including the importance of mobility options, safety, aesthetics, and community context.

The guidelines for providing these transit facilities and amenities are based on the following considerations:

1. Basic bus operations and safety requirements;
2. Current engineering practices in North San Diego County;
3. Amenities necessary for attracting and increasing transit ridership;
4. Anticipated benefits to developers or agencies in providing transit services to their future residents, tenants, and customers;
5. Compatibility of the improvements with other roadway uses; and
6. The Americans with Disabilities Act (ADA)

We at NCTD want to work with you to develop an environment that will be more conducive to and more accessible by public transit. Please feel free to contact our Transit Planning and Bus Operations Division with questions or to schedule an appointment with a planner.

Principal Contact: Damon Blythe - Chief Operations Officer - Transit Planning and Bus Operations
North County Transit District
810 Mission Avenue
Oceanside, CA 92054
Phone (760)-966-6708
Email dblythe@nctd.org

2.0 NCTD Service Overview

The North County Transit District (NCTD) provides public transportation services to North County San Diego across a 1,000 sq.mi. area, connecting residents and visitors to jobs, schools, medical centers, and other points of interests. In addition to expanding modal choice across the community, NCTD services enable mobility for those who have limited travel options, including seniors and persons with disabilities. Serving as the coastal gateway to the San Diego region, the NCTD multi-modal system consists of COASTER commuter rail, SPRINTER hybrid rail, BREEZE fixed-route bus, FLEX demand response, and LIFT complementary paratransit services. In calendar year 2016, NCTD carried more than 11.5 million passengers throughout North San Diego County.

NCTD's service area spans across nine cities, unincorporated areas of San Diego County, tribal lands, and a major military base that serves as the largest employer in San Diego County. Each of these entities contain diverse populations with differing community visions and land use plans, resulting in differing types of service levels and modes to best meet the area's travel needs. Development projects must take into consideration the characteristics of NCTD services and associated vehicles when designing infrastructure. Roadways, intersections, stops, and other facilities, as outlined in this guidebook, must be designed in a manner that accommodates NCTD's transit vehicles to ensure safety for both the passenger and service provider.

3.0 Bus Stop Guidelines

Obstacles to improving transit infrastructure – lack of sidewalk and bike network, available space for stop infrastructure (including ADA), accessible neighborhood sidewalks connecting to stops, accessible street crossings. Work with city departments to make improvements and encourage continued upgrades to complete the networks, especially during other construction projects.

3.1 Curb-Side Improvements

Passenger comfort, safety, and convenience are all impacted by bus stop features that are located off the street or roadway, commonly referred to as curbside improvements. This section outlines how developers and jurisdictions can appropriately locate bus stops and choose the correct stop type, as well as information on general preferred and recommended curbside improvements.

3.1.1 Bus Stop Types

The design of a bus stop can often impact the amount of ridership at that particular location. A stop must be accessible, safe, and convenient for passengers. NCTD has developed three distinct bus stop types – the basic stop, the bench stop, and the shelter stop – as well as stops associated with transit stations/centers.

BASIC STOPS are characterized by the presence of a bus stop sign only, and do not contain passenger amenities like benches or shelters. These stops are generally utilized in rural areas or those areas with lower density and lower ridership. Basic stops are required to meet ADA design requirements.

BENCH STOPS are basic transit stops with the addition of a bench for waiting passengers and trash receptacles. In some cases, additional amenities such as lighting or bicycle racks may be warranted. Bench stops are best suited for areas with low to medium density and ridership.

	Required Amenities	Recommended Amenities	Optional Amenities
Bench Stops	<ul style="list-style-type: none"> • Bus stop sign • ADA accessible pad • Bench • Connection to adjacent sidewalks/pathways • Trash receptacle 	<ul style="list-style-type: none"> • Lighting • Bicycle racks/lockers • Transit route information 	<ul style="list-style-type: none"> • Screening from sun / elements (landscaping) • Transit system information

SHELTER STOPS are located in areas with higher ridership and medium to high density developments. In addition to a sign, ADA compliant concrete pad, and bench, these stops include a shelter and trash receptacle, at a minimum. Additional amenities like lighting and bicycle racks are highly encouraged. The design of a shelter stop is dependent upon the existing features of the site, including sidewalk design, right-of-way, and proximity to existing structures.

	Required Amenities	Recommended Amenities	Optional Amenities
Shelter Stops	<ul style="list-style-type: none"> • Bus stop sign • ADA accessible pad • Bench • Shelter • Connection to adjacent sidewalks/pathways • Trash receptacle 	<ul style="list-style-type: none"> • Lighting • Bicycle racks/lockers • Transit route information • Screening from sun / elements (landscaping) • Transit system information 	<ul style="list-style-type: none"> • Digital messaging signs

STATION STOPS are associated with branded services like BREEZE Rapid. These stops have enhanced passenger amenities, including more robust transit system information signage and branded shelters.

	Required Amenities	Recommended Amenities
Station Stops (BREEZE Rapid)	<ul style="list-style-type: none"> • All requirements of shelter stops, plus: • Single shelter or double shelter with integrated station marker • Station marker with integrated seats • Solar-powered LED lighting 	<ul style="list-style-type: none"> • Transit route and schedule information • Transit system information • Wayfinding signage • Digital messaging signs

The dimensions for each stop type above have been provided as guidelines for the development of new bus stops. District staff understands that some stops may not be able to be retrofitted to meet these standards, or alternative designs may be more feasible based on existing conditions. When a developer has been required to upgrade an existing stop, District staff should be contacted to help create an appropriate design.

3.1.2 Bus Stop Type Selection Criteria

The type of stop provided is primarily driven by route frequency and land use density – routes with higher frequency are typically located in areas with more intensive development, and generally result in more daily boardings. The table below shows the recommended attributes for each of the four stop types. District staff will assist developers in determining the appropriate stop type on a case-by-case basis.

Table 1: Bus Stop Type Location Recommendations

Criteria	Basic Stop	Bench Stop	Shelter Stop
Minimum Daily Boardings			
Rural Stop	<5 daily boardings	5 – 10 daily boardings	10+ daily boardings
Suburban Stop	<10 daily boardings	10 – 20 daily boardings	>20 daily boardings
Urban Stop	<20 daily boardings	20 – 30 daily boardings	>30 daily boardings
Density Considerations	Low density residential; Rural	Low to Medium Density Residential; Commercial; Industrial	Medium to High Density Residential; Mixed-Use; Commercial Core
Land Use and Development: Located $\frac{1}{4}$ -mile (max.) from employment center, retail/commercial center, mixed use development or other major activity center			✓
Population Considerations: Youths, seniors, disabled persons, low-income households		Within $\frac{1}{4}$ -mile of population concentrations	Within $\frac{1}{8}$ -mile of population concentrations
Connections with other NCTD mode or transit provider		✓	✓
Located within Planned Enhanced Development Corridor			✓

In addition, NCTD's system also includes Station Stops, which are generally characterized by service from multiple routes and/or providers, enhanced facilities, and higher ridership. Stops that are served by BREEZE Rapid are also categorized as Station Stops. New stations should be focused in urban and more developed suburban areas with a mix of uses, commercial core development, and medium to higher density housing, particularly with affordable and multi-family housing, in addition to the provision of enhanced transit service or connections to multiple transit options. In suburban settings, a minimum of 100 daily boardings may warrant a general station, while in urban settings, a minimum of 500 daily boardings should be generated.

3.1.3 Design and Access

Providing defined, safe, and direct access to a bus stop is critical to maintaining and increasing transit usage. Access to a bus stop from an intersection or land use should be as direct as possible, and provide essential security and safety along the route. General guidelines for access are as follows:

GENERAL ACCESS AND SITE DESIGN

- Pedestrian access should be finished with impervious, non-slip material (such as concrete or asphalt) and be well drained, and should not require passengers to walk through grass or exposed soil.
- All sidewalks and pathways should be designed to accommodate wheelchair and other mobility devices
- Intersections near bus stops should include defined pedestrian crosswalks and signals at intersections to allow for safe access. In situations where there is no signalized intersection, pedestrian signals may be warranted based upon the stop usage and development type.
- In areas with disjointed sidewalk networks, new bus stops should include new sidewalks or pedestrian pathways that connect the stop with existing intersections, at a minimum.
- Defined pathways from the sidewalk and/or bus stop waiting area to the curb (bus loading area) should be provided in compliance with ADA requirements.
- A minimum of 5 feet should be kept clear between bus stops and utility poles, fire hydrant, and other similar features.

LANDSCAPING

- Landscaping near the passenger area should be used to maximize shade and overall aesthetics, however should be located so as not to interfere with bus operations or obstruct shelters or lines of sight.
 - Preferred locations for larger landscape elements, like shade trees, are at the back of a sidewalk, behind shelters and/or benches.
- The use of landscaping is encouraged to help define pathways, buffer pedestrians from adjacent traffic, and provide shade; however, landscaping should be designed in a manner that eliminates barriers and impediments to pedestrian access, visibility, or safety.
 - Plants should be kept open and trimmed low to enhance line of site for passengers. Dense hedges that restrict view are discouraged.
 - Visibility around and through landscaping should be maintained for surveillance and security.

SECURITY

- Bus stops and sidewalks should be coordinated with existing streetlights to provide a minimum level of lighting and security.
 - In areas without existing lighting, new stops should provide solar lighting, where feasible.
- Views to and from sidewalks or pathways through bus stops and waiting areas should not be blocked by walls, structures, or landscaping.

NEW DEVELOPMENTS

- New developments should be designed to provide clear and direct access to bus stops (existing or new), and should emphasize pedestrian access, activity, and safety.
 - Gated or walled developments should provide openings through walls to minimize the walk distance and provide a more direct route to bus stops.
 - Developments with parking lots should be designed with clear pedestrian walkways.
 - Distinct walkway networks should be provided where bus stops and/or transit centers can be linked with building entrances.

- Entrances to buildings should face the street with pedestrian access located close to the nearest bus stop.

Rural areas may present challenges for bus stop design and placement, as many areas are lacking sidewalk networks or have other potential impediments such as drainage ditches along the roadway. In these cases, efforts should be made to find the most level and open area for the bus stop to ensure customer safety for access and waiting. When funding is available, at a minimum, new stops should include ADA accessible waiting pads and any necessary ramps constructed of concrete or asphalt, and where feasible, connections to existing intersections or developments. When funding is not available, waiting areas along the shoulder should be comprised of compacted and stabilized decomposed granite, if feasible.

Compliance with Americans with Disabilities Act

The Americans with Disabilities Act of 1990 (ADA) “prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation.”

28 CFR § 36.402 – Alterations: General (1): Any alteration to a place of public accommodation or a commercial facility, after January 26, 1992, shall be made so as to ensure that, to the maximum extent feasible, the altered portions of the facility are readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs.

*The quoted text above is an excerpt. The full CFR text shall be considered when performing any alterations.

The following bus stop specifications are to be used as guidance when constructing or improving bus stops. A complete list of enforceable accessibility standards shall be referenced from <https://www.ada.gov/index.html>.

810 Transportation Facilities

810.1 General. Transportation facilities shall comply with 810.

810.2 Bus Boarding and Alighting Areas. Bus boarding and alighting areas shall comply with 810.2.

Advisory 810.2 Bus Boarding and Alighting Areas. At bus stops where a shelter is provided, the bus stop pad can be located either within or outside of the shelter.

810.2.1 Surface. Bus stop boarding and alighting areas shall have a firm, stable surface.

810.2.2 Dimensions. Bus stop boarding and alighting areas shall provide a clear length of 96 inches (2440 mm) minimum, measured perpendicular to the curb or vehicle roadway edge, and a clear width of 60 inches (1525 mm) minimum, measured parallel to the vehicle roadway.

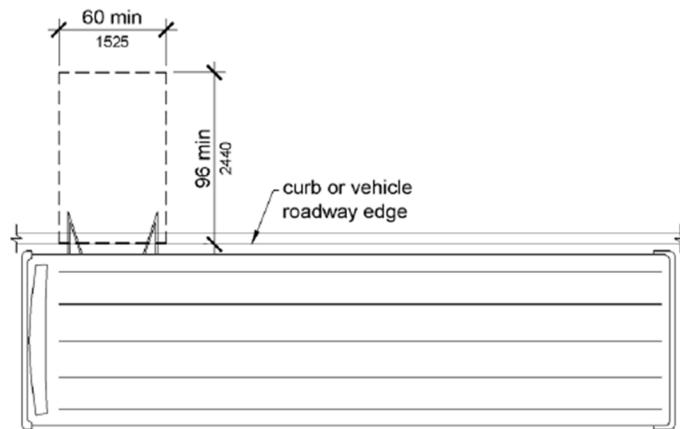


Figure 810.2.2 Dimensions of Bus Boarding and Alighting Areas

810.2.3 Connection. Bus stop boarding and alighting areas shall be connected to streets, sidewalks, or pedestrian paths by an accessible route complying with 402.

810.2.4 Slope. Parallel to the roadway, the slope of the bus stop boarding and alighting area shall be the same as the roadway, to the maximum extent practicable. Perpendicular to the roadway, the slope of the bus stop boarding and alighting area shall not be steeper than 1:48.

810.3 Bus Shelters. Bus shelters shall provide a minimum clear floor or ground space complying with 305 entirely within the shelter. Bus shelters shall be connected by an accessible route complying with 402 to a boarding and alighting area complying with 810.2.

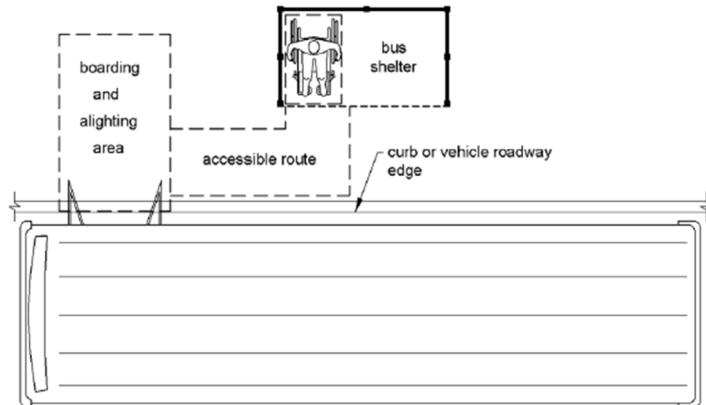


Figure 810.3 Bus Shelters

903 Benches

903.1 General. Benches shall comply with 903.

903.2 Clear Floor or Ground Space. Clear floor or ground space complying with 305 shall be provided and shall be positioned at the end of the bench seat and parallel to the short axis of the bench.

903.3 Size. Benches shall have seats that are 42 inches (1065 mm) long minimum and 20 inches (510 mm) deep minimum and 24 inches (610 mm) deep maximum.

903.5 Height. The top of the bench seat surface shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the finish floor or ground.

402 Accessible Routes

402.2 Components. Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable requirements of Chapter 4.

Advisory 402.2 Components. Walking surfaces must have running slopes not steeper than 1:20, see 403.3. Other components of accessible routes, such as ramps (405) and curb ramps (406), are permitted to be more steeply sloped.

403 Walking Surfaces

403.1 General. Walking surfaces that are a part of an accessible route shall comply with 403.

403.2 Floor or Ground Surface. Floor or ground surfaces shall comply with 302.

403.3 Slope. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.

403.4 Changes in Level. Changes in level shall comply with 303.

403.5 Clearances. Walking surfaces shall provide clearances complying with 403.5.

EXCEPTION: Within employee work areas, clearances on common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

403.5.1 Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of walking surfaces shall be 36 inches (915 mm) minimum.

EXCEPTION: The clear width shall be permitted to be reduced to 32 inches (815 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

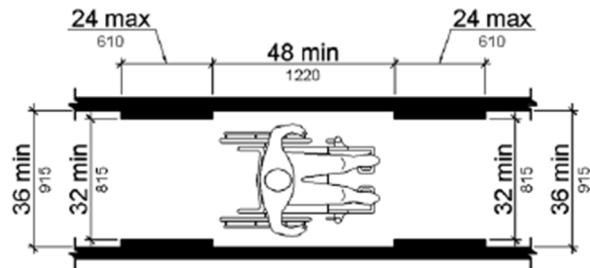


Figure 403.5.1 Clear Width of an Accessible Route

403.5.2 Clear Width at Turn. Where the accessible route makes a 180 degree turn around an element which is less than 48 inches (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum compliance with 403.5.2 shall not be required.

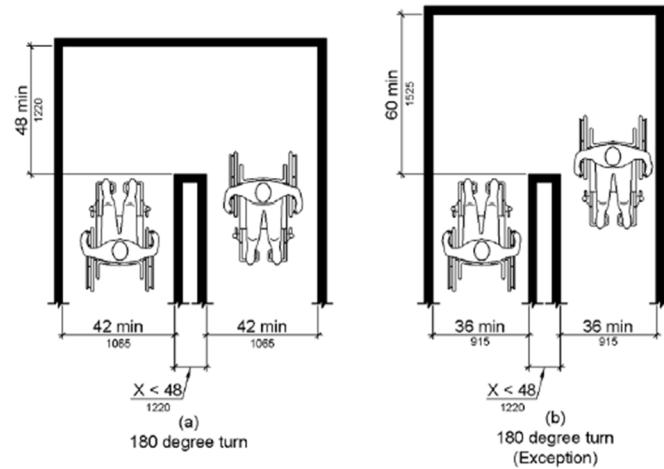


Figure 403.5.2 Clear Width at Turn

403.5.3 Passing Spaces. An accessible route with a clear width less than 60 inches (1525 mm) shall provide passing spaces at intervals of 200 feet (61 m) maximum. Passing spaces shall be either: a space 60 inches (1525

mm) minimum by 60 inches (1525 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with 304.3.2 where the base and arms of the T-shaped space extend 48 inches (1220 mm) minimum beyond the intersection.

305 Clear Floor or Ground Space

305.1 General. Clear floor or ground space shall comply with 305.

305.2 Floor or Ground Surfaces. Floor or ground surfaces of a clear floor or ground space shall comply with 302. Changes in level are not permitted.

305.3 Size. The clear floor or ground space shall be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

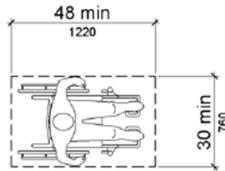


Figure 305.3 Clear Floor or Ground Space

305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearance complying with 306.

305.5 Position. Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element.

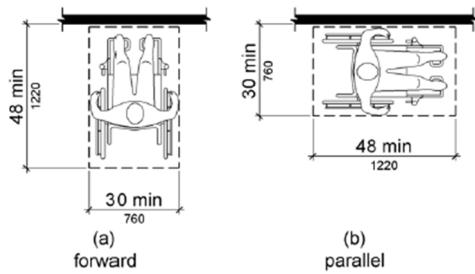


Figure 305.5 Position of Clear Floor or Ground Space

305.6 Approach. One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space.

305.7 Maneuvering Clearance. Where a clear floor or ground space is located, an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with 305.7.1 and 305.7.2.

305.7.1 Forward Approach. Alcoves shall be 36 inches (915 mm) wide minimum where the depth exceeds 24 inches (610 mm).

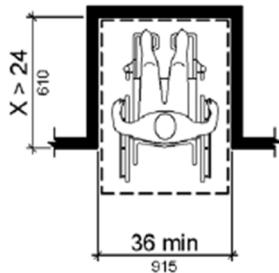


Figure 305.7.1 Maneuvering Clearance in an Alcove, Forward Approach

305.7.2 Parallel Approach. Alcoves shall be 60 inches (1525 mm) wide minimum where the depth exceeds 15 inches (380 mm).

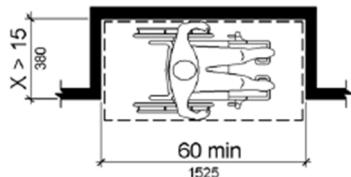


Figure 305.7.2 Maneuvering Clearance in an Alcove, Parallel Approach

304 Turning Space

304.1 General. Turning space shall comply with 304.

304.2 Floor or Ground Surfaces. Floor or ground surfaces of a turning space shall comply with 302. Changes in level are not permitted.

Advisory 304.2 Floor or Ground Surface Exception. As used in this section, the phrase "changes in level" refers to surfaces with slopes and to surfaces with abrupt rise exceeding that permitted in Section 303.3. Such changes in level are prohibited in required clear floor and ground spaces, turning spaces, and in similar spaces where people using wheelchairs and other mobility devices must park their mobility aids such as in wheelchair spaces, or maneuver to use elements such as at doors, fixtures, and telephones. The exception permits slopes not steeper than 1:48.

304.3 Size. Turning space shall comply with 304.3.1 or 304.3.2.

304.3.1 Circular Space. The turning space shall be a space of 60 inches (1525 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.

304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction and the base shall be clear of obstructions 24 inches (610 mm) minimum. The space shall be permitted to include knee and toe clearance complying with 306 only at the end of either the base or one arm.

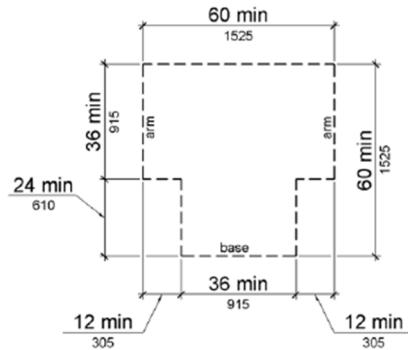


Figure 304.3.2 T-Shaped Turning Space

3.1.4 Bus Stop Amenities

In addition to stop type, the amenities provided are highly dependent upon the number of passengers that use the stop. As activity and ridership increase, expanded amenities beyond the required bench or shelter are typically warranted. District staff will assist developers in determining the appropriate amenities on a case-by-case basis.

In an attempt to standardize the look of street furniture, as well as minimize potential damage from the elements and vandalism, NCTD has identified the following standards for certain stop amenities:

Bus Stop Sign – Bus stop signs must be placed at all designated stops, and must include service type (BREEZE, LIFT, and/or FLEX) and route number associated with the stop. All bus stop signs, including dimensions and

placement, must comply with ADA requirements as defined in Sections 810.4 of the ADA Accessibility Guidelines, to the maximum extent feasible.

ADA ACCESSIBLE PAD – All bus stops should be designed to comply with ADA requirements. When new development activity occurs adjacent to a non-compliant bus stop, efforts shall be made to upgrade the stop to comply with ADA.

BENCH – ADA guidelines for benches are not enforceable, but shall comply with ADA Standards where applicable, (903). New benches should be constructed of perforated metal with no back, and of solid welded construction using heavy-duty pipe. Benches must be 4-, 6-, or 8-feet in length, and may either have center or multiple divider tubes. Finishes must be sandblasted and powder coated, and ground smooth with no sharp corners. Each bench should be surface mounted. Colors selected for benches should be consistent with the design requirements of the appropriate jurisdiction where the stop is located. In some cases, specific designs may be approved to ensure consistency with overall project design.



Figure 2: Bench Stop Examples

SHELTER – New shelters should be consistent with NCTD's standard specifications, unless the shelter is part of a larger project with an approved design. Dimensions are dependent upon the specific installation location, but generally should range between 8-feet and 13-feet in length. Additionally, design styles are dependent upon the specific project environment, however the dome style is the standard acceptable design. Walls (back and sides) should be constructed of perforated metal with vertical columns, and where required, should include LED lighting.

(conventional or solar powered). Roofing should be comprised of durable materials, such as LEXAN or aluminum. Each shelter must include a built-in ADA compliant aluminum bench and the overall structure must be surface mounted. Colors selected for the shelters should be consistent with the design requirements of the appropriate jurisdiction where the stop is located.



Figure 3: Shelter Stop Examples

TRASH RECEPTACLE – All ground-mounted trash receptacles located at bench and shelter stop locations are required to be 32-gallon perforated metal construction with a flat bar top and bottom pedestal mount. Trash receptacles must be constructed of aluminum, steel, or stainless steel, and finished with a galvanized powder primer and secondary powder coat. Lids must be 11-gauge thick laser cut with a 10-inch center hole and locking hasp. To comply with ADA requirements, trash receptacles should not be placed within the required minimum clear area or in a manner that would obstruct walking paths. Colors for the trash receptacles should be consistent with the design requirements of the appropriate jurisdiction where the stop is located.

LIGHTING – For shelter stops, solar lighting panels mounted on the roof of approved shelter designs are recommended. Bench stops may provide pole mounted lighting if located in an area with limited lighting, or instead, may take advantage of existing street lights or lighting from adjacent buildings by located the stop appropriately.

BIKE RACKS / LOCKERS – Bike racks and secured storage lockers should be designed to complement other street furniture used at the stop in terms of construction, style, and colors. All bicycle facilities should be placed outside of the required minimum ADA clear area.

TRANSIT ROUTE AND SYSTEM INFORMATION – Transit route schedules and maps (for stops served by a specific route) are recommended to be displayed at bench stops with higher daily boardings and shelter stops. For shelter stops with higher ridership and/or served by multiple routes, it is recommended that system map and schedule information be displayed. For bench stops, route information should be displayed with pole-mounted cases; approved shelter designs incorporate mountings for map and system information display cases.

SCREENING FROM SUN / ELEMENTS – Weather in San Diego County is associated with exposure to sun year-round, with increased intensity during the summer months. When shelters are not provided or warranted, other shade-

providing elements should be installed, where feasible, such as trees or other fixed screens. If additional screening is provided, safety of passengers must also be considered – dense hedges or non-transparent materials are not recommended.

WAYFINDING SIGNAGE – Wayfinding signage is recommended at high ridership stops that serve multiple transit modes, such as Station Stops/Transit Centers. Signage should provide clear direction for passengers to key features, such as boarding areas for different modes and fare payment resources (i.e. TVMs).

DIGITAL MESSAGE SIGNS – Electronic messaging information should be included at BREEZE Rapid stops, as well as Station Stops/Transit Centers and high ridership shelter stops that serve multiple routes. Signs may be LED panels and/or LCD screens and should display bus arrival/departure information and passenger alerts.

3.2 Street-Side Improvements

Improvements within the roadway that may impact bus operations are considered street-side improvements. This includes adequate stop spacing, stop location and placement, stop design, and other roadway characteristics like intersection design. While developers and jurisdictions are encouraged to follow the guidelines below, NCTD understands that in some cases, existing roadway design and characteristics may present challenges; in these cases, NCTD can advise on acceptable solutions.

3.2.1 Stop Spacing

The spacing between bus stops can impact both transit vehicles and the overall system's performance, as it can impact overall travel time and, as a result, demand for transit. Stops that are located closer together (such as every block or ¼-mile apart or less) provide for short walk distances but more frequent stops and longer bus trips. Stops that are farther apart result in longer walk distances but higher speeds and shorter bus trips.

These tradeoffs will impact where a bus stop is located along a route, in addition to other factors such as development type and potential ridership generated. In a dense residential or commercial environment, closer stop spacing may be required in order to serve passenger demand. Conversely, the street network in suburban or rural may force stops to be located further apart than desired. Higher frequency services like BREEZE Rapid generally have increased stop spacing in order to minimize travel times.

NCTD's general recommended stop spacing for BREEZE and BREEZE Rapid is as follows:

Table 3: Recommended Bus Stop Spacing

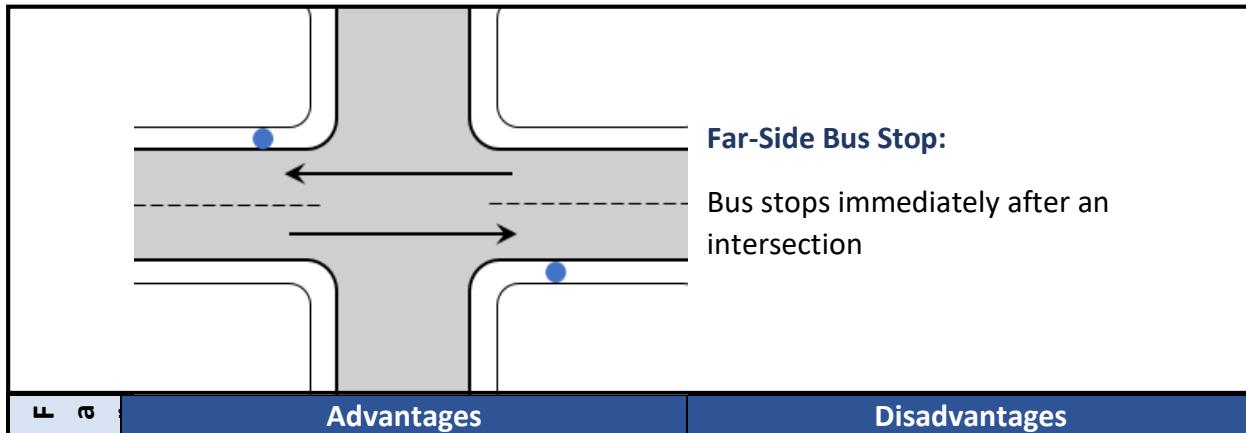
Service Type	Area Type	Distance Between Stops
BREEZE	Rural	0.5 miles
	Suburban	0.3 miles
	Urban	0.25 miles
BREEZE Rapid		0.5 – 2.0 miles

3.2.2 Stop Location and Placement

A bus stop is a linear curbside area that is specially designed for bus passenger boardings and alightings. It is identified by a bus stop sign and may be accompanied by a red curb zone and/or no-parking sign, as well as amenities like benches or shelters. **NCTD staff must be consulted before placing, relocating, removing, or enhancing a bus stop.** The placement of new bus stops should not only consider spacing and ridership potential, but also safety to pedestrians, bicyclists, and vehicle traffic, as well as the right-of-way's ability to accommodate the required stop type and associated amenities. In general, the following factors¹ should be considered when determining the appropriate bus stop location and placement:

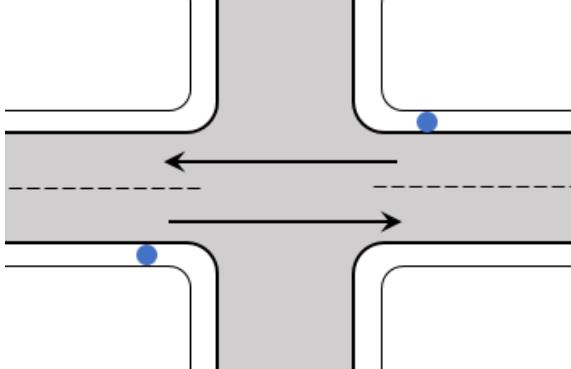
- Adjacent land use and activities
- Bus route operations and movements
- Bus signal priority
- Impact on intersection operations
- Intersecting transit routes
- Intersection geometry
- Parking restrictions and requirements
- Passenger origins and destinations
- Pedestrian access, including accessibility for disabled persons
- Physical roadside constraints, such as trees, utility poles, or driveways
- Potential ridership
- Presence of bus bypass lane
- Traffic control devices

Stop locations fall within three categories: far-side, near-side, and mid-block. **Far-side** stops are characterized by bus stops located after an intersection. **Near-side** stops are located immediately before an intersection. **Mid-block** stops are located within the block. NCTD staff will determine which stop location is the most appropriate based on individual situations.

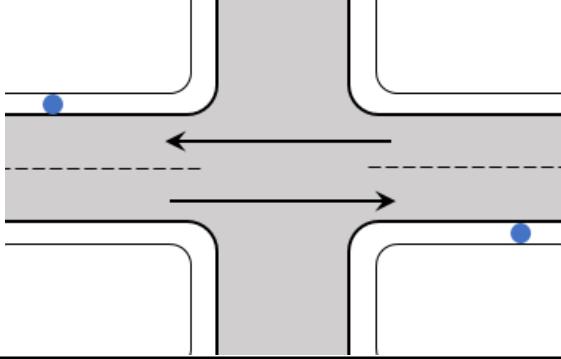


¹ TCRP Report 19: Guidelines for the Location and Design of Bus Stops

	<ul style="list-style-type: none"> Minimizes conflicts between right turning vehicles and buses Provides additional right turn capacity by making curb lane available for traffic Minimizes sight distance problems on approaches to intersection Encourages pedestrians to cross behind the bus Creates shorter deceleration distances for buses since the bus can use the intersection to decelerate Results in bus drivers being able to take advantage of the gaps in traffic flow that are created at signalized intersections 	<ul style="list-style-type: none"> May result in the intersections being blocked during peak periods by stopping buses May obscure sight distance for crossing vehicles May increase sight distance problems for crossing pedestrians Can cause a bus to stop far-side after stopping for a red light, which interferes with both bus operations and all other traffic May increase the number of rear-end accidents since drivers do not expect buses to stop again after stopping at a red light Could result in traffic queued into intersection when a bus is stopped in travel lane
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	 <p>Near-Side Bus Stop: Bus stops immediately before an intersection</p>
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Near-Side	Advantages <ul style="list-style-type: none"> Minimizes interferences when traffic is heavy on the far side of the intersection Allows passengers to access buses closest to crosswalk Results in the width of the intersection being available for the driver to pull away from the curb Eliminates the potential of double stopping Allows passengers to board and alight while the bus is stopped at a red light Provides driver with the opportunity to look for oncoming traffic, including other buses with potential passengers 	Disadvantages <ul style="list-style-type: none"> Increases conflicts with right-turning vehicles May result in stopped buses obscuring curbside traffic control devices and crossing pedestrians May cause sight distance to be obscured for cross vehicles stopped to the right of the bus May block the through lane during peak period with queuing buses Increases sight distance programs for crossing passengers
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Mid-Block Bus Stop:
Bus stops located in middle of block

	Advantages	Disadvantages
Mid-Block	<ul style="list-style-type: none"> Minimizes sight distance problems for vehicles and pedestrians May result in passenger waiting areas experiencing less pedestrian congestion 	<ul style="list-style-type: none"> Requires additional distance for no-parking restrictions Encourages patrons to cross street at midblock Increases walking distance for patrons crossing at intersections

Whenever possible, bus stops should be located at the far-side of an intersection to facilitate bus and traffic operations, and to maximize pedestrian safety. Under the following special circumstances, near-side stops may be necessary:

1. If accumulation of buses occasionally exceed the length of bus zones, far-side stops should be avoided and the zone placed on the near-side.
2. At transfer points of two crossing routes, placing one stop on the near-side and the stop for the crossing route on the far-side is an advantageous arrangement. This places both stops on the same corner and minimizes street crossings by transferring passengers.
3. When a large percentage of bus passengers using a stop destined to a single large generator, the bus stop should be located so that pedestrian traffic is minimized in the intersection. The proper bus stop location could be either near-side or far-side.

NCTD staff should be consulted whenever special circumstances regarding bus stop placement arise. Bus stop zones can usually be accommodated on-street in the parking lane or bike lane.

3.2.3 In-Street Bus Stop Design

NCTD utilizes three main types of bus stop designs – curbside stops, bus bulb (curb extension), and bus turnout (bus bay). The application of each stop design type is dependent upon the current or planned roadway conditions and design, as required stop zone lengths and operational impacts vary.

Curbside Stop Design

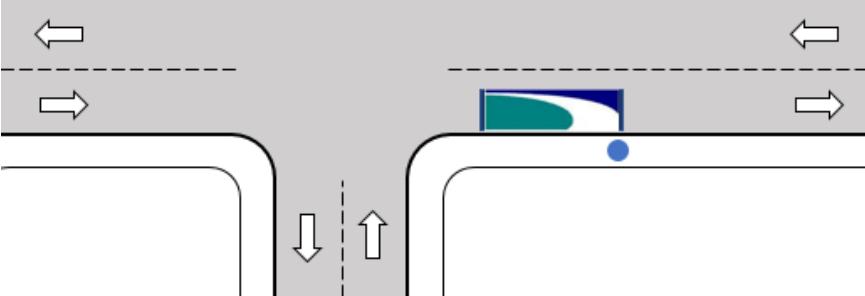
Bus stops located directly along the roadway curb and within a travel lane are referred to as curbside stops. Curbside stops can allow one or multiple buses to be stopped at a given time, depending on the length of curb

available, passenger service time at the stop, and the rate of bus arrivals. To ensure that adequate space is provided for the bus, no parking zones must be included at curbside stops as follows:

- **Near-side stops:** 100 ft. minimum no parking zone
- **Far-side stops:** 90 ft. minimum no parking zone
 - *Stop after a bus turn:* 130 ft. minimum no parking zone, including 60' clear space from the rear of the bus at the stop to the curbline of the intersecting street.
- **Mid-block stops:** 130 ft. minimum no parking zone

New curbside stop locations must ensure that adequate space is available for ADA design requirements, as well as any warranted passenger amenities. Additionally, where feasible, connections to existing pedestrian and bicycle facilities should be incorporated to increase access to the stop. In general, curbside stops should be located in a manner that considers the following:

- Stop does not result in passengers waiting for a bus in the middle of a driveway, or so that the stopped bus does not block a driveway.
- Stop is near a major intersection that is signalized, includes a stop sign, or near an existing pedestrian crossing signal to increase passenger safety.
- Stop allows passengers to board or alight the bus directly from a curb (where present) rather than from a driveway.



Curbside Stop:
Bus stops along curb in roadway

Curbside	Advantages	Disadvantages
	<ul style="list-style-type: none"> • Provides easy access for bus drivers and results in minimal delay to the bus. • Simple design is easy and inexpensive to install. • Easy to relocate. 	<ul style="list-style-type: none"> • Can cause traffic to queue behind stopped bus, thus causing traffic congestion. • May cause drivers to make unsafe maneuvers when changing lanes in order to avoid a stopped bus.

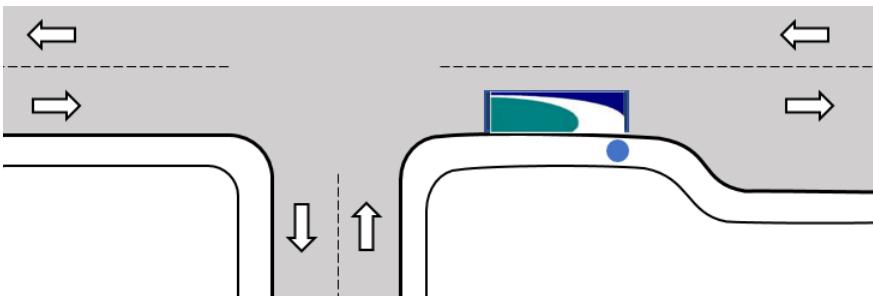
Bus Bulb Stop Design

A bus bulb is a section of sidewalk that extends from the curb of a parking lane to the edge of a through lane, and are also known as curb extensions. A bus bulb allows buses to stop in the traffic lane instead of weaving in and out of a parking lane or shoulder. The following list outlines reasons for constructing bus bulbs:

- Additional space for bus passengers, benches, shelters, and other amenities are needed;
- Reduces congestion at busy sidewalks;

- Shortens crossing distance for pedestrians at intersections and crosswalks;
- Reduces bus stop spacing requirements at bus stop (shared traffic lane and stop);
- Improves safety by eliminating bus-weaving maneuver in and out of traffic; and/or
- Saves time by reducing conflicts between bus and through traffic.

NCTD recommends bus bulbs at bus stops that have high passenger volumes, crowded sidewalks, and at streets with permit curbside parking.



Bus Bulb Stop:
Bus stops along curb extension in traffic lane

	Advantages	Disadvantages
Bus Bulb	<ul style="list-style-type: none"> • Removes fewer parking spaces for the bus stop. • Decreases the walking distance (and time) for pedestrians crossing the street. • Provides additional sidewalk area for passengers to wait. • Results in minimal delay for bus since it is not turning out of the travel lane. 	<ul style="list-style-type: none"> • Installation costs are higher compared to curbside stops. • Can cause traffic to queue behind stopped bus, thus causing traffic congestion. • May cause drivers to make unsafe maneuvers when changing lanes in order to avoid a stopped bus.

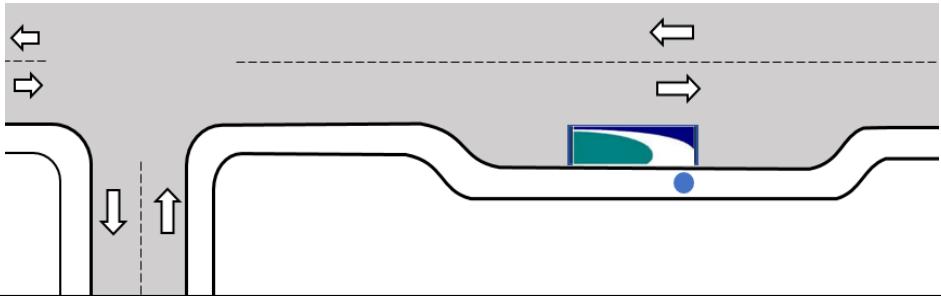
Bus Turnout / Bus Bay Stop Design

Bus turnouts are widened sections of roadway designed for buses to pull out of the traffic stream. In cases where there are no parking or right-turn lanes, or where traffic speeds or passenger boardings/bus volumes are high, a bus turnout may be necessary. Bus turnouts should be considered at a location when the following factors are present:

- Traffic in the curb lane exceeds 250 vehicles during the peak hour;
- Traffic speed is greater than 45 mph;
- Bus volumes are 10 or more at peak hour period on the roadway;
- Passenger volumes exceed 25 boardings per hour;
- Potential for auto/bus conflict warrants separation of transit and passenger vehicles;
- History of repeated traffic and/or pedestrian accidents at stop location; and/or
- Sight distances (i.e. hills, curves) prevent traffic from stopping safely behind a stopped bus.

NCTD suggests installing bus turnouts sparingly and only when assessing the issues mentioned above. Buses removed from the roadway will often have difficulty merging back into traffic, thus negatively impacting on-time performance and the quality of transit service. NCTD staff can provide more information regarding when construction of a bus turnout is necessary.

Due to the large amount of stress that buses place on our roadways, NCTD recommends that concrete bus pads be installed at all bus turnouts. This will reduce the amount of necessary street maintenance due to pavement damage at bus stops.



Bus Turnout Stop:
Bus stops out of traffic

	Advantages	Disadvantages
Bus Turnout	<ul style="list-style-type: none"> • Allows passengers to board and alight out of the travel lane. • Provides a protected area away from moving vehicles for the stopped bus and passengers. • Minimizes delay to through traffic by pulling out of the travel lane to stop. 	<ul style="list-style-type: none"> • May present problems to bus drivers when attempting to re-enter traffic, especially during periods of peak travel, that result in on-time performance issues. • Installation costs are higher compared to curbside stops. • Difficult and expensive to relocate.

3.2.4 Vehicle and Roadway Design Considerations

Roadway design is a critical consideration when siting and developing bus stops. The following section outlines various general characteristics related to roadway design.

Vehicle Considerations

NCTD FLEET CHARACTERISTICS – Currently, NCTD operates vehicles ranging in length, with the largest bus extending 40 feet. NCTD may purchase larger articulated buses in the future for specific routes and corridors. All vehicles are equipped with bicycle racks and wheelchair lifts. NCTD’s vehicles are fueled with either CNG, gasoline, or diesel; vehicle height varies depending on the fueling type, and is an important consideration due to horizontal clearance requirements. In addition to height, the vehicles width, weight, and turning radius are all additional features that can influence a bus stop design. NCTD recommends that new bus stops be designed to accommodate 40 foot vehicles, with the following specifications:

- **Length:** 40'-0"
- **Width:** 102"
- **Height:** 11'-1"

However, certain corridors may warrant stops that can accommodate larger buses to remain consistent with longer-range NCTD service plans. As such, planners and developers should coordinate with NCTD to ensure that the most appropriate specifications are considered during the planning stage.

TURNING RADII – In order for buses to safely execute turning movements in and out of bus stops, adequate roadway clearances, and more specifically, bus turning radii, are required. Bus turning radii refers to an outside and inside turning arc, both of which must be considered when designing any turning movements associated with bus stops. Below is a sample template for a turning radius for a 40-foot bus.

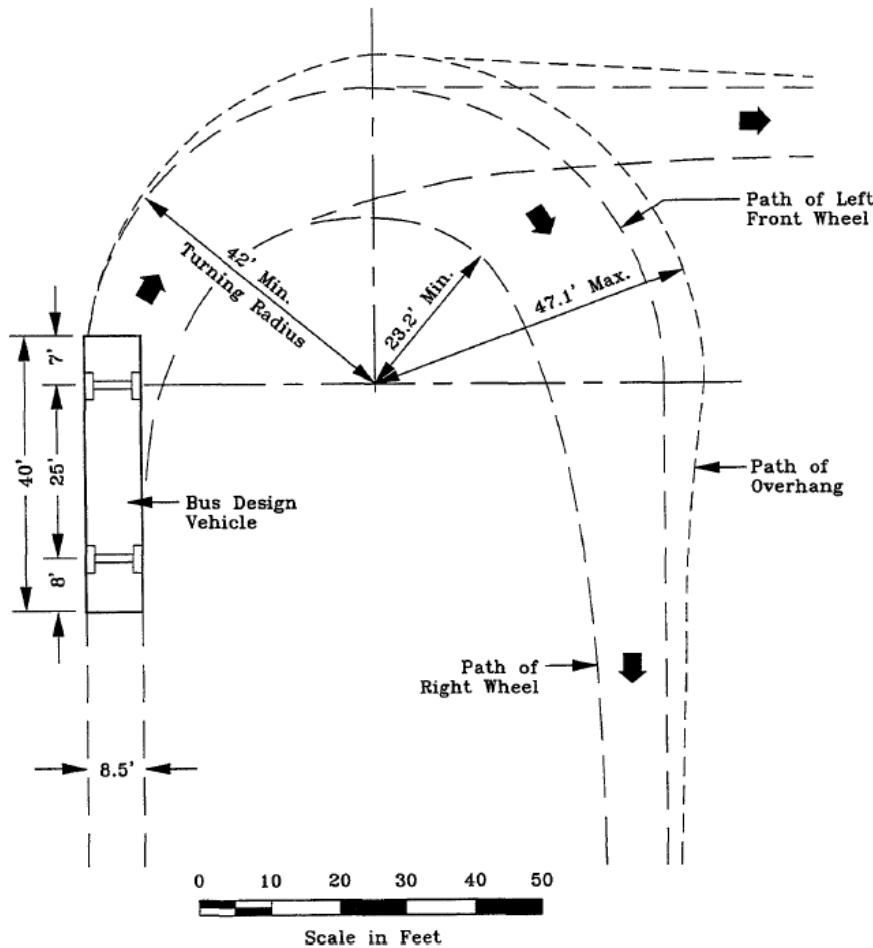


Figure 4: Bus Turning Radii Specifications

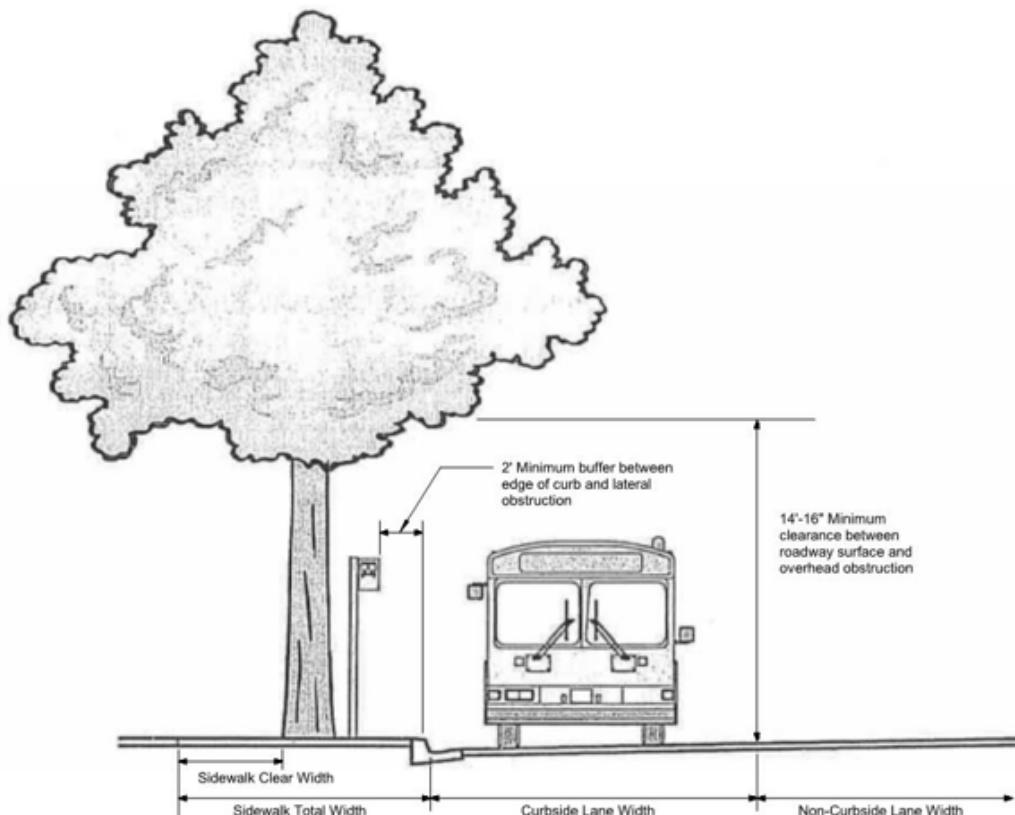
Roadway Considerations

ROADWAY DESIGN – Bus stops should be designed in a manner that accommodates the size, weight, and turning requirements of NCTD's buses. Doing so helps to improve the safety and operation of the overall roadway, not just the transit vehicle. Frequent stops along the roadway necessitate buses to travel in the lane that is closest to the curb, resulting in bus clearance and other design requirements, as follows:

- Minimum 14 ft. vertical clearance for overhead obstructions (i.e. trees, signs, or utilities) above the street surface
- Minimum 2 ft. horizontal clearance from the edge of the street to avoid strikes from bus mirrors
- Minimum 12 ft. traffic lane for lanes used by buses to accommodate total maximum bus width (body + mirrors)
- Ideal total width (travel lane + curb + gutter) of 14 ft.
- Maximum 6 percent grade for uphill roadways and 12 percent grade for downhill roadways
- Maximum 6 percent grade change between street and driveway
- Ideal curb height of 6 to 9 in.

VERTICAL AND HORIZONTAL CLEARANCES FOR BUSES

Scale 1" = 6" (approximate)



Total Width At Bus Stops: 10' Minimum
15' Desirable in Commercial Areas

Between Bus Stops: 5' Minimum
8' Desirable

With No Parking: 12" Minimum
14" Desirable

With Parking: 18' Minimum
20' Desirable

11" Minimum*
12" Desirable

* Lane widths narrower than 11' will result in encroachment into adjacent lanes.

Note:
Sidewalk clear width should be 4' minimum, 6' desirable; where pedestrian traffic is heavy, up to 8' of clear width should be reserved. Sidewalks must provide clear space for loading and unloading passengers in wheelchairs. Placement of benches, newsracks, etc. should be located carefully.

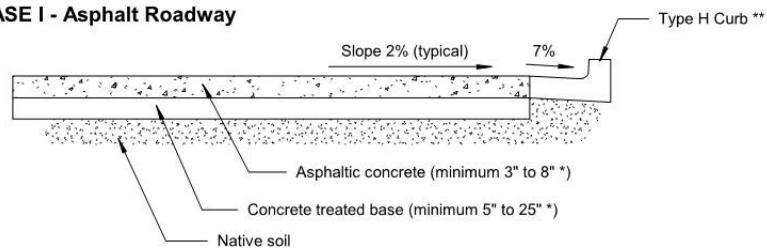
Figure 5: Specifications for Vertical and Horizontal Clearances

PAVEMENT – To accommodate the repetitive bus axle loads of 25,000 pounds, roadways pavements must be of sufficient strength. Concrete is the preferred material for bus pads to avoid failure problems that are common with asphalt, and is more apt to withstand the load and sheer force applied during bus starting and stopping movements.

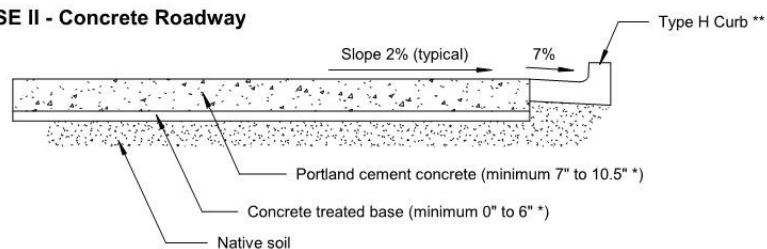
PAVEMENT COMPOSITION

Scale 1" = 4'

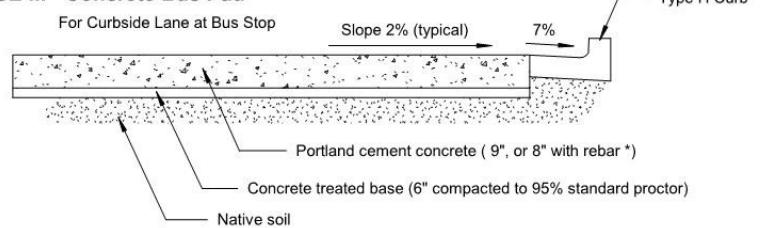
CASE I - Asphalt Roadway



CASE II - Concrete Roadway



CASE III - Concrete Bus Pad



Note:

* Thickness of layers depends upon average daily traffic volume and resistance value of native soil.

** Type G curb is acceptable on collector streets.

Figure 6: Pavement Composition Specifications

4.0 Coordinating Transit and Land Use

When transit and land use work seamlessly together, the quality of life for residents and visitors increases. NCTD places a priority on coordinating transportation and land use decisions as a means to increase transit access, and to ensure that development considers and plans for transit from the very beginning. With nine separate jurisdictions in NCTD's service area, this coordination is essential, as each community has a unique vision for how their community will be shaped over time.

Those in the private sector proposing new development at or adjacent to existing transit stops and stations, as well as new development with new transit facilities, should become familiar with the standards throughout this document to ensure that their projects will accommodate transit. Alternately, as transit accessibility and pedestrian accessibility are closely linked, developments should at a minimum, provide pedestrian and bicycle access to existing transit facilities. The design of our communities must recognize possibilities that may exist several years into the future. Ideally, land use development and planning professionals should work together with the transit agency to ensure that the new development is well positioned in relation to transit services. When buses do not serve a proposed project at the present time, designing for buses is still desirable by considering the transit program's short-term and long-term plans for service and expansion. Proper location decision-making during the planning stage of a project will assure that future extensions of service, if needed, are consistent with the transit agency's service plans and can be accommodated economically.

There are many ways in which the design of new development can encourage greater use of public transit. Most involve little cost or effort if they are followed early enough.

4.1 Location

The location of a development is an especially important consideration when thinking about transit usage and service. Developments with high intensity uses, for example, are incredibly valuable to the economic health and quality of life within a community, however when located in areas with minimal to no transit service, this value is greatly diminished. As a result, developers and planners should include transit as a decision-making criteria when selecting development sites or broader planning initiatives to ensure that the value of both the transit service and the community's health are fully realized.

New developments should carefully consider what the transit needs may be based upon the uses involved. Uses that would generate transit ridership, such as employment centers, social services/community resources, or multifamily residential, should ideally be located within ½-mile of an existing bus route so that passengers can easily access the service, or so that transit service may be realigned (if possible) to serve the development. Planners and developers should take care not to site large-scaled developments far from existing (or planned) transit service, highlighting the importance of involving NCTD early on in the planning process to assess 1) whether transit can easily be provided within a cost efficient manner, 2) what types of amenities would be required, or 3) whether future transit service plans would positively or negatively impact the success of the development.

4.2 Density and Land Use

4.2.1 Transit-Supportive Design and Development

Transit-supportive development not only includes mixed land use and higher densities, but also incorporates design strategies that bring the development to a pedestrian scale. The design and orientation of buildings can both contribute to or discourage transit usage in ways which are not always obvious. Most suburban buildings are oriented to people arriving by automobile, with parking facilities located along the street and buildings set back. In contrast, buildings and developments should be designed and sited in ways that cater to transit riders, pedestrians, and cyclists, as well as those arriving by car. Building entrances should be clearly visible to those arriving on foot, bicycle, or transit, and access to entrances should include clearly defined and direct pedestrian paths from the street. Further, public spaces that include pedestrian walkways, bicycle routes, street furniture, and streetscaping are vital to transit supportive developments and should be integrated into developments at or adjacent to bus stops and stations.

Quite often, transit service is relegated to the periphery of a development as a practical necessity. A bolder approach is to bring transit service to the heart of a community, integrated into its fabric and treated as an asset to be embraced rather than a nuisance. Neighborhoods with attributes that lend to potential transit success –



Figure 7: Vista TOD with affordable housing

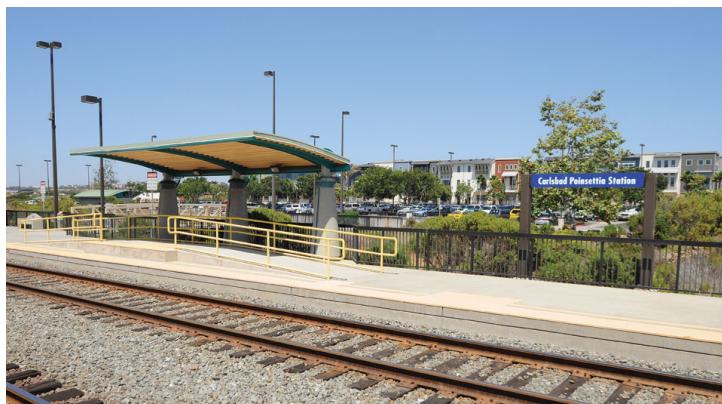


Figure 8: Carlsbad Poinsettia Station TOD

efficient street networks, adequate pedestrian and bicycle facilities, mixed uses, and/or transit supportive densities – should be prioritized. Transit should be incorporated in the developments where it “makes sense” – pulling transit onto streets that are difficult for buses to navigate, such as winding through walled communities or through low-density developments – is not good practice and should be avoided. Instead, developments should be designed for transit service, or at a minimum, be located adjacent to quality bus service with direct and clear access to existing stops and stations.

Transit-oriented developments (TODs) focus on providing a mix of elements that are conducive to transit usage, and incorporate many (if not all) of the concepts discussed in this section.

Key Transit Supportive Design and Development Guidelines Supported by NCTD

- Orient developments towards the street, with parking located to the rear of buildings rather than along the street frontage.
- Building design and circulation plans should minimize the need for parking and increase the opportunity for transit and active transportation.
- Bus stop and station elements should be incorporated into the design, in addition to other public spaces like walkways, bicycle paths, and street furniture.
- Emphasize compatible and compact land uses that enable convenient access to and from bus routes, and that are designed to provide connections to a variety of uses (i.e. residential, employment, educational, and commercial).
- Minimize walk distances through developments to bus stops, especially those with walls or gates, so that transit is accessible to most patrons or residents.

4.2.2 Transit Supportive Densities

Higher density development, particularly when paired with mixed-use development, is a factor that is often associated with high transit ridership. Appropriate levels of density vary between neighborhoods and communities, and does not mean that only high-rise apartments and office buildings should be constructed near bus stops. Instead, certain thresholds of development should be encouraged that complement the surrounding area and community goals. As the relationship between transit usage and density varies by mode and frequency of service, development must consider the both the existing and planned land uses in concert with the available and planned transit services.



Figure 9: North City Master Plan rendering, San Marcos



Figure 10: North Beach Promenade development rendering, Oceanside

NCTD encourages development of at least 12 to 18 residential dwelling units per acre to generate transit ridership, ideally within $\frac{1}{4}$ -mile of a bus or rail stop/station. Where densities of a project vary, the highest densities should be located closest to existing or potential bus stops to encourage transit usage. Please check with local Planning Departments to determine appropriate project density.

Key Development Density Strategies Supported by NCTD

- Low-density development or developments with low rates of employment are discouraged from locating near existing bus stops and stations.
- Higher density developments with affordable housing and a mix of uses are encouraged at or near existing bus stops and stations.
- Land use density should be maximized within transit walksheds/bikesheds and should minimize parking requirements.
- Densities should be matched to the available and planned services in order to maximize ridership potential generated by new developments. For example, employment and service-related development densities may be more appropriate near COASTER stations, while higher residential densities may be more beneficial near BREEZE stations and stops.

4.2.3 Land Use Diversity

A basic element often overlooked in creating a more multimodal focused environment is the importance of mixing different types of land use – housing, retail commercial, restaurants, office, etc. Mixed use developments increase connectivity between these elements, in turn strengthening the potential for transit success, as well as pedestrian and bicycle activities. Providing a mix of uses reduces the need for car ownership, increases opportunities to walk or cycle for everyday trips, promotes transit usage, and creates an overall public transit friendly environment vital to community sustainability. Important to public transit usage, diverse uses along a street increase foot traffic that lends a sense of security for those waiting for a bus.



Figure 11: North City Master Plan, San Marcos



Figure 12: Pacific Station Development, Encinitas

Retail uses are a key component of effective mixed-use developments, and in particular, ground floor retail. These uses optimally should be located as close to a bus stop as possible in order to generate ridership. Additionally, a mix of uses that combines retail and restaurant within close proximity to employment centers can greatly encourage a shift towards transit for both lifestyle and commute trips. Employees are more likely to use transit services when they have walkable access to other amenities during the day. For other residents or visitors, a mix of uses allows for the ability to

combine multiple errands or activities together in a single location, further reducing the need for an automobile to complete their trip.

Key Land Use Guidelines Supported by NCTD
<ul style="list-style-type: none"> • Limit auto-oriented uses near transit. For developments already in place, incorporate shared parking strategies like park-and-ride lots near transit stops with existing parking lots to encourage transit usage. • Encourage TOD development at or near existing transit stops or stations, especially those with multimodal options, higher frequency transit routes, or with service by multiple bus routes/providers. • Street corners should be developed with transit supportive commercial uses, like restaurants, services, and shopping, along with bus stops. • When evaluating new developments near existing bus stops or along designated/planned development corridors, mixed-use developments should be provided within $\frac{1}{2}$-mile of a bus stop or station, with retail uses as close to the stop as possible. • Concentrate employment centers near existing or planned transit routes, as well as near other services like retail and restaurant uses.

4.3 Access and Walksheds

The simplest way of increasing the use of public transportation is to establish communities where walking and biking are more attractive. Transit combined with pedestrian and bicycle access is critical not only for creating a complete and sustainable transportation network, but also to encourage passengers to use transit to complete daily trips and activities. The factors that encourage people to walk are often subtle, but they all focus upon the creation of a pleasant environment for the pedestrian. New or existing developments that are within close proximity to transit should incorporate plans for improved pedestrian access to nearby bus stops, which may include pedestrian walkways/entrances separate from the street network.

Adequate sidewalks, pathways, and crosswalks will assist in the creation of a pedestrian and bicycle environment, and will reinforce safety for users. Sidewalks in residential areas should be of sufficient width for two people to walk side-by-side comfortably, and multiuse pathways should be designed to accommodate both pedestrians and bicyclists safely. Please check with the local jurisdiction, as required sidewalk and bicycle facility widths may vary.

The walkable area surrounding a bus stop or station (or “walkshed”) differs between pedestrian and bicyclists, as well as between general transit modes. In general, acceptable pedestrian walksheds are $\frac{1}{4}$ -mile for local fixed route bus (BREEZE, FLEX) and $\frac{1}{2}$ -mile for higher capacity transit (BREEZE Rapid, SPRINTER, COASTER), while a 3-mile radius is suitable for bicycles, regardless of mode. To ensure connectivity with land uses, new developments with transit supportive densities and associated bus stops should be focused within these walkshed targets, and investments should be made to expand stop area walksheds at existing stops. Combined with investments like street furniture, lighting, and landscaping, clear and direct pathways from the bus stop to employment centers or other high-intensity uses within the walkshed often help to improve the public’s perception of transit and serve as a catalyst to usage.

Major streets and arterials accommodate and encourage high levels of traffic, and also pose special problems for transit. Many of the streets in North County are wide, lack access to abutting land uses, cater to high-speed traffic, are difficult places for buses to stop, and present safety challenges for pedestrians and bicyclists to cross.

Street crossings must be allowed at frequent intervals to increase safety and include pedestrian access to all abutting land uses.

Key Access Guidelines Supported by NCTD

- Focus developments within $\frac{1}{4}$ -mile to $\frac{1}{2}$ -mile of existing bus routes to provide walkable access to transit.
- While walled and gated developments are generally discouraged from a transit perspective, new such developments should include openings for pedestrian and bicycle access to major corridors with transit service.
- Provide designated pathways for pedestrians to access existing bus stops and stations.