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History

Our bus stops are often the first point of contact with our passengers. The spacing, location, and design of bus stops significantly influence transit system performance and, more importantly, customer satisfaction.

This manual describes the processes to establish and improve bus stops. It identifies agency standards for the location and installation of new bus stops and facilities, and provides a framework for bus stop improvements. Pierce Transit uses the standards listed in this manual when coordinating with jurisdictions and developers. This is particularly important during the early planning stages, because it enables transit to be incorporated in road and parcel developments or improvements.

BRIEF AGENCY HISTORY

The Pierce County Public Transportation Benefit Area Authority, commonly known as "Pierce Transit" was formed in 1979 when voters passed a 0.3 percent sales tax to fund public transportation. By authorizing this taxing authority, a municipal corporation (Pierce Transit) was formed under Chapter 36.57A of the Revised Code of Washington.

Pierce Transit strives to provide safe, courteous, reliable transportation service over a 450-square mile area that includes the urbanized areas of Pierce County, some rural areas, Fort Lewis, and McChord Air Force Base. As of 2005, Pierce Transit serves just over 3,300 bus stops, 6 transit centers and 11 park & rides. A map of the service area boundaries and population density is on the following page. In addition, we work closely with Sound Transit, the Regional Transit Authority, and other local transit providers to effectively coordinate service between and across county boundaries.

Types of Service

LOCAL FIXED ROUTE SERVICE
Pierce Transit's local fixed route service operates on a timed transfer basis, which provides service all day throughout Pierce Transit's service area. Local Fixed Route service accounts for 98% of the total system service hours and 99% of current ridership. This does not include Sound Transit service.

ST EXPRESS SERVICE
Pierce Transit provides express service under contract with Sound Transit. This service provides non stop or limited stop service. Express Service is provided to downtown Seattle, Sea-Tac Airport, Auburn, Sumner, Gig Harbor and Bonney Lake.

CARPOOL & VANPOOL SERVICE (CTR/Commute Trip Reduction)
Pierce Transit supports carpooling and vanpooling activities through the provision of ridematch services, marketing and the provision of vanpool vehicles. Additionally, Pierce Transit provides support services to Pierce County employers in the development of transportation demand management and commute trip reduction programs.

HYBRID SERVICE

Zone Services
Transit vehicles serve a geographic area at a set time with service availability entirely determined by customer requests. Vehicles in a zone do not follow a prescribed route. Specific pick-up/drop-off locations may be established to facilitate grouping of customers, but the specific locations are only served if there is a customer request. If no requests are received, there is no service. An example of this type of service is the Orting Loop.

Route Deviation Service (Bus PLUS)
Transit vehicles follow a general route but do not necessarily serve all parts of the basic route if service is requested in an adjacent neighborhood or at designated locations. These services operate with general rules of deviation and limitations on the number of deviations. This type of service requires the dedication of a vehicle. Typically, a schedule is established at a few locations and service is provided to those locations on a scheduled basis with deviations occurring between the established schedule points. The schedule may provide a time range when a vehicle will serve a location, rather than a specific time. Bus PLUS is an example of this type of service.

Basic Standards & Site Characteristics

MINIMUM STANDARDS

1. A 5′ X 8′ level landing area for customers to safely wait for, board and alight the bus.
2. An area for a bus to safely serve the bus stop on or off the roadway.
3. An easily identifiable Pierce Transit bus stop sign/flag.
4. An accessible pathway around the bus stop or shelter of at least 4 feet.
5. An accessible pedestrian path from the bus to the waiting area.

SITE CHARACTERISTICS FOR INSTALLATION

Visibility
Bus stops should be located in clear view of approaching traffic. A bus stop should not be located just below the crest of a hill or out of sight on a curve.

Accessibility
New bus stops or those that are improved must meet minimum ADA requirements. A number of stops in Pierce Transit's service area remain that do not meet these requirements. As time and resources allow, these stops should be improved to meet ADA guidelines. Pierce Transit does not typically construct improvements such as sidewalks, curb cuts or other street improvements. However, each location varies.

Adequate Right-of-Way
To provide an accessible bus stop location, a minimum of 8′ of right-of-way, from the face of curb or roadway edge of pavement to back of the right-of-way, is needed. If, in order to provide adequate bus stop width, a bus stop improvement intrudes on private property, prior written authorization from the owner must be obtained (Section III and Appendix 10).

Safe Operation
Pierce Transit staff members will conduct an on-site review of each proposed bus stop or improvement to determine whether the proposed location will allow passengers to wait and board in safety while also allowing buses to safely approach, dwell, and depart from the location.

Jurisdictional Approval
Each jurisdiction has a unique approval process for bus stop installation or improvements (refer to Jurisdictional Procedures binder).

Railroad Tracks
As a guideline, bus stops should not be closer than 50 feet to at-grade railroad crossings.

Site Selection & Design Improvement Considerations

Customers and the community served by the bus route are very important in the site selection process. When selecting bus stop locations and designing improvements, additional factors must be considered including:

1. Vehicular safety (for example, avoid placing bus stops where vehicles will or may be making right turns in front of the bus)
2. Intersection design and sightlines (merging traffic, blind corners, beyond the crest of a hill, turn radius)
3. Pedestrian safety, avoid encouraging pedestrians to cross in front of the bus
4. Proximity to pedestrian facilities (sidewalk, crosswalk, curb cuts, etc.)
5. Proximity to surrounding stops along the route
6. Proximity to its pair (across the street)
7. Existing landing characteristics (dimensions, surface, drainage, etc.)
8. Existing amenities that could be utilized by passengers (sheltered waiting area, seating, lighting, pay phone, etc.)
9. Proximity to major trip generators (shopping, medical, apartments, colleges)
10. Traffic volumes, conditions and speed limits
11. Pullout (recommended for layover or relief points and required at 45 mph or greater)
12. Longevity: if a bus stop is to be installed or improved for less than 5 years, an alternative should be considered. Check with Operations Planning also for information about upcoming service and route changes.
13. Resources available for waiting areas and passenger improvements
14. Demonstration of Benefit: priority will be given to installing or improving bus stop locations where the most benefit will be gained from these improvements.

Passenger Safety Improvements

For any improvement, it is essential to coordinate with the local jurisdiction to avoid future conflicts or duplication of efforts.

PADS
Pads are generally constructed as a means of providing a dry, level waiting area and are most appropriate in areas where sidewalks are not present or as a means of allowing wheelchair access at a bus stop location. Typically, pads are constructed of concrete and are large enough to support a future shelter. The pad will ideally be 15′ wide, at least 6′ deep and 8″ thick (see Appendix 2). This area is in addition to the depth of the sidewalk. The minimum allowed under ADA guidelines is 5′ by 8′. Asphalt, at a depth of 2″ minimum, is acceptable only when used for a passenger waiting area, not a shelter. Pads should be constructed to meet sidewalk standards and can have a slope no greater than the edges. Using rails or fencing around the perimeter should not trap pedestrians. The placement of the pad should be adjacent to the bus stop and be placed so that light poles, landscaping or other obstructions do not interfere with boarding activity and should be at least 15′ from a fire hydrant or 10′ from a utility pole.

SIDEWALK CONNECTION
A sidewalk connection should be provided along avenues with planted or grass parkway strips, between the existing sidewalk and the curb where a bus passenger would otherwise have to cross wet grass or mud during inclement weather. This is of particular concern where patrons with disabilities use the stop.

GRADING
Grading of the stop area may be necessary to improve drainage. When standing or flowing water disrupts passenger boarding, filling and grading operations can redirect rainwater. Often this can be accomplished at small cost by Pierce Transit's bus stop maintenance crews but may occasionally require the use of extensive fill material and heavy equipment that would necessitate the project's inclusion as a major stop improvement. When ridership is not sufficient to justify the cost of constructing a bus stop pad, grading the area with a compacted base material may be appropriate.

SIDEWALKS AND RAMPS
Sidewalks and ramps are often necessary to provide access between the bus stop and adjacent businesses, crosswalks and corners. Generally, Pierce Transit coordinates with the local jurisdictions to identify the need to have sidewalks constructed. However, when a short length of sidewalk is needed but not likely to be built by a local jurisdiction or developer, Pierce Transit may opt to construct it. Sidewalks and ramps must meet ADA guidelines and local jurisdictional codes.

BOLLARDS
Bollards are typically steel pipe or concrete posts, 6′ tall, 4″ in diameter, which are installed with locking sleeves to a depth of 2′ in the ground. This provides 4′ above ground as vehicle damage protection to the shelter or bus stop when they are close to parking lots, gas stations or other areas where the possibility of vehicular contact is increased.

Bus Zone Improvements

For any improvement, it is essential to coordinate with the local jurisdiction to avoid future conflicts or duplication of efforts.

BUS ZONES

Bus Zones are established to provide an area for buses to stop parallel to the curb, in a designated "no parking" area. Preferably, both the front and rear door will be aligned with suitable landing areas. Generally, a zone for a 40' bus is 80' long, with the pole and sign/flag at the head of the zone. Increase the zone to 120' for a 60' bus, or 70' for a 30' bus. Whenever possible, a 75' "no parking area" is designated by curb striping* or "No Parking" signs. When painting is deemed appropriate, the zone must start and end with red paint, and alternate red with yellow in 5' increments. On streets already designated as no parking, a 15' section of curb painting may be used to help identify the bus stop. The zone should begin at the bus stop pole and continue to the rear of the zone. Local authorities indicate parking infringement will not be enforced unless the bus zone is painted.

BUS PULLOUTS

Bus pullouts are dedicated stopping areas with deceleration/acceleration tapers, where buses pull completely out of the lane of travel. A fully developed pullout is more than simply a widened shoulder; it is constructed with curb, gutter and sidewalk as well. Pullouts are generally undesirable because they cause delays and increase the chance of collisions as buses re-enter the roadway. However, there are some circumstances where pullouts are needed:

- State law recommends that any bus stop on a State Route, outside City limits be completely off the road. Exceptions may be made if speeds are under 45 mph and if it is a multiple lane road.
- On non-State roadways with speeds in excess of 40 mph, every effort will be made to pull off the roadway. This is based on TCRP recommendations which are lower than the WSDOT requirement of 45 mph.
- At heavily used stops, those where two buses are likely to be serving the stop simultaneously, at stops with longer than average bus dwell times, such as those serving disabled or elderly populations and where otherwise required.
- Layover points where the Operator takes a break or must wait for a connecting bus.
- Relief points where Operators change shifts.

* Although an 80' zone is preferred, when painting the curb based on this guideline, 75' is the nearest combination of striping ending in red. Since the majority of our stops are at the far side of the intersection, the remaining 5' is regained by proximity to crosswalks, intersections or other no parking areas.

Signage & Passenger Information

Standard Small Bus Stop Sign (old style)

Standard Medium Route Sign (old style)

Standard Large Transit Center Sign (old style)

Trunk/Route Sign ("blade" style) "super route"

Trunk/Route Sign ("blade" style) regular route

STANDARD BUS STOP SIGNS
Pierce Transit operates a variety of services, and those services usually have their own signage. For specific design information, consult Pierce Transit's Styles Manual. We are currently transitioning to a new "blade" style bus stop sign design which is brighter, slightly larger and more contemporary in style.

OVERALL SIZE
Small: 15.75"w X 32"h
Medium: 20"w X 43"h
Large: 20"w X 53"h

STANDARD ROUTE SIGN
This sign is scheduled to be phased out by 2007. It is being replaced on a route by route basis.

STANDARD TRANSIT CENTER SIGN

TRUNK ROUTE/BLADE SIGN
This is a "super route" sign designated by the route number within the circle graphic.

Signage & Passenger Information - continued

BUS PLUS FIXED ROUTE
Same dimensions as a standard blade.

BUS PLUS RESERVATION ONLY
Same dimensions as an Old Style Standard Small Sign.

ORTING LOOP
Same dimensions as an Old Style Standard Small Sign.

Exterior Sign

Interior Sign

SHUTTLE
This sign is placed at regularly scheduled SHUTTLE stops, as well as at Transit Centers.

INTERIOR/EXTERIOR SIGNAGE
This sign is at a designated SHUTTLE pick up area, such as Pierce Transit's lobby.

Signage & Passenger Information - continued

Passenger Information comes in several different forms. Specific standards for the design and placement of route and schedule information can be found in the Pierce Transit Styles Manual. Business advertisements, social notices, or information leaflets placed in or on the shelters are prohibited and will be removed. At Marketing's discretion, one or more of the following rider information types may be installed:

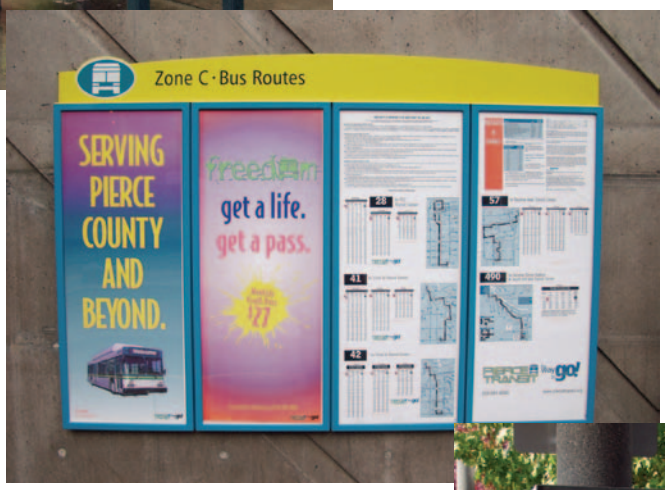
MIDI RIDE GUIDES

Pierce Transit has over 1200 bus stops that have Midi Ride Guides. Installed on the bus stop pole, or directly to a shelter support beam, about 4' from the ground. Contain route maps and schedules; typically installed at bus stops serving two routes. Facilities Maintenance installs the holders and the majority of the guides, and also installs printed ride guides during Service Changes. 8.5"w X 14"h

LARGE RIDE GUIDES

Free-standing, two sided signs installed perpendicular to the street. One type of ride guide sign exists with an image area of 17"w X 33"h. Top panels or headers are 17"w X 14"h. The overall dimensions for the large ride guide is 21-1/8"w X 88"h. The aluminum frames are 2" X 2" square wall tubing welded together. They must not obstruct the sight line of the bus driver's view of a passenger. They are used primarily at multiple route stops at major intersections. They hold route information and promotional pieces.

Signage & Passenger Information - continued



KIOSKS
Free-standing, four-sided aluminum framed structures with a usable space of 18"w X 24"h per side. They are 2' square at the base, 3'4" square at the peaked roof, and 8'4" tall. They are used primarily at multiple route stops at major intersections. The space may contain promotional material and route information. They must not obstruct the sight line of the bus or the driver's view of a passenger. They are provided in coordination with business districts and neighborhood councils.

RIDE GUIDES
To coincide with Commerce Street's face-lift in February 2003, Pierce Transit ushered in several newly-designed ride guides for zones A, C, D, E, F, and H. These are used on special corridors only.

DISPLAY CASES
Display cases at transit centers are mounted directly to the shelter structure. They contain promotional posters and route information. The posters inside these cases are larger, 17"w X 44"h.

Benches

Benches are appropriate at stops where ridership is not adequate to warrant the placement of a shelter but where passenger seating is desirable, such as stops where senior citizens or persons with disabilities frequently board. In some cases, adjacent businesses have installed a canopy or awning and may encourage benches as well. Benches are also appropriate at locations where space or sight distance considerations make a shelter impractical, or where bus patrons are sitting on adjacent private property. Pierce Transit considers bench installation at bus stops with five or more average daily boardings.

BENCH INSTALLATION GUIDELINES

a. Benches must be located outside of the accessible landing area, typically 6′ from the nearside of the bus stop pole.

b. The footprint area of the bench must be added to the minimum accessible landing area of 5′ X 8′.

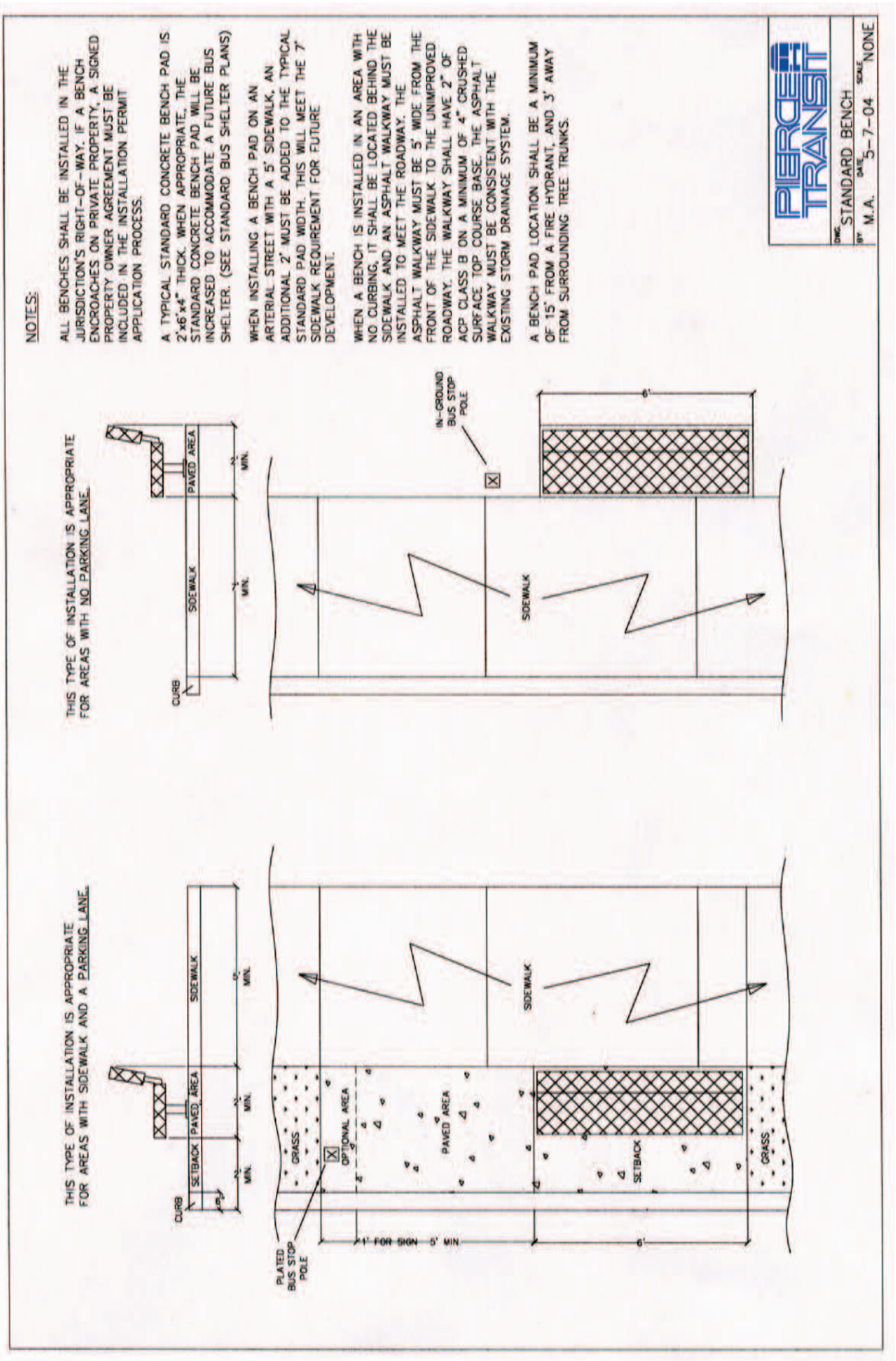
c. Ideally, the bench will be at the back of the sidewalk, creating maximum distance between the lane of travel and the bench. Benches should face the street, and must be positioned to ensure that there is at least 4′ of space between the bench and the curb to avoid conflict with the opening of the bus doors.

d. If a sidewalk is present, bench placement must allow a minimum of 5′ of sidewalk clearance for passing pedestrians. However, some jurisdictions prohibit benches on the sidewalk. A small foundation pad behind the sidewalk or sono-tubes are needed in these cases.

e. Benches may be mounted with leg bottom plates, directly to the sidewalk or in the ground with 18″ deep concrete footings. Where no sidewalks are present, some jurisdictions also require a pad beneath the bench and customers′ feet. It must be large enough to accommodate the bench and foot space in front. Four feet wide should be sufficient. This may be concrete or asphalt.

NOTE
Non-concrete surfaces such as asphalt or brick are not suitable surfaces for any plated bench installation.

Standard Bench



Benches - continued

6' Bench

4' Bench

Flip Bench

6' BENCH
Six feet long with a back, typically used at free-standing stops or in double shelters.

4' BENCH
Four feet long with no back, primarily used in shelters.

FLIP BENCH
Six feet long flip benches, very limited use, usually to replace a standard bench when people have been sleeping on the standard style.

DIVIDED BENCH
Six feet divided, very limited use, similar to that of the flip bench. The divided bench has enough room for two people to sit, separated by an arm rest/seat divider roll bar in the middle and one on either end.

Divided Bench

Benches - continued

Business District Bench

Simme Seat Bench

Custom Bench

BUSINESS DISTRICT BENCH
Six feet long, used in business districts, vary in color and have metal vertical slats with an attractive rounded end. They are more expensive than the standard bench. They are used both in a business district shelter or free standing within a business district.

SIMME SEAT BENCH
Simme-Seat style benches slide down over the bus stop pole, partially relying on the pole for support. It has a seat on either side of the pole. This is ideal for limited right-of-way areas where a bench is still justified. However, the mounting surface must be concrete and the bus stop pole set in a concrete footing. The Simme-Seat mounts directly to the concrete. The pole should be located at the back of the sidewalk to keep the customers away from the street.

CUSTOM BENCH
Custom or private party benches include Rotary clubs and businesses. Wood is a common construction material. Pierce Transit does not usually maintain these benches.

Shelters

Shelters offer passengers a location protected from the weather to wait for a bus. At existing bus stops, the need for a shelter is prioritized based primarily upon the number of average daily boardings, with 10 or more as a basis for consideration. A stop that is expected to be impacted by a developer or community project may yield a shelter installation. Advertising companies may install shelters as well. However, their criteria are based primarily on the visibility of their advertising.

SPACE REQUIREMENTS

A passenger shelter should be located within the available public right-of-way, on a site that allows for clear and open pedestrian movements. Whenever possible, it should be located at or near street lighting to improve the safety and visibility of the stop. The site must be large enough to accommodate the shelter and provide additional standing, waiting and walking space around the shelter. In most cases, a concrete pad 15′ X 10′ is desired for a shelter site. These dimensions may include the sidewalk area between the shelter and the curb. However, each location needs to be individually planned.

If adequate space cannot be provided at the existing bus stop, the adjacent property owner may be asked to allow Pierce Transit to encroach on the property. Appropriate easements or permissions must be obtained in writing prior to payment of applicable building permit fees. Where this is not possible, relocation of the stop will be considered. In cases where the site is too constrained to allow for a shelter and adequate circulation, and where the stop cannot be reasonably relocated, a shelter may not be appropriate. In these cases, installing a bench or a waiting pad without a shelter may be considered.

Shelters - continued

SHELTER CONSTRUCTION OPTIONS

Pierce Transit-provided Shelters
Pierce Transit arranges for site preparation, the construction of footings, shelter fabrication, permits, installation and inspection.

Advertising Shelters
Advertising shelters are used along high traffic corridors where the advertising company, Pierce Transit and the jurisdiction have determined they are appropriate. These shelters have an illuminated canister on one end, which provides lighting inside the shelter and holds two back-lit posters that measure 47.25" X 68.75".

Developer-provided Shelters
When a property owner/developer is interested in or required to provide a shelter, Pierce Transit consults with the property owner/developer regarding the best way to achieve this goal. In most cases, the developer will pay for the improvements, and the improvements become the property and responsibility of Pierce Transit. Pierce Transit will enter into a written agreement with the developer that will include provisions for reimbursement of the shelters (Sect. IV). The developer may wish to have a custom shelter that is consistent with the overall theme or look of the adjacent development. The maintenance and upkeep of developer provided shelters may be negotiated between Pierce Transit and the Developer; however, Pierce Transit will retain ongoing responsibility for the quality of stop improvements intended for its customers. Pierce Transit will review shelter designs of this type to ensure that basic shelter standards are met, such as security, pedestrian circulation, access for persons with disabilities, basic structural elements and ease of repair (see Appendix 4).

Business District/Special Interest Groups Shelters
Pierce Transit has an arrangement with the City of Tacoma and several of its business districts. It is agreed that for locations within a defined business district that are to be upgraded with a shelter, the business district has the option to pay the difference between the standard and business district shelter cost. If they don't wish to pay the added cost, a standard shelter will be installed. If the business district selects a location that is not on Pierce Transit's list of stops to improve, a cost sharing agreement must be reached prior to installation. Other cities and even business districts located in the unincorporated county may participate in the program in the future.

Shelters - continued

SHELTER CONSTRUCTION OPTIONS - continued

Custom Design Shelters

The design and construction of community-funded shelters is usually undertaken in conjunction with local residents, business districts or neighborhood groups, and the jurisdiction involved to integrate with the community design. While these shelters generally conform to the Pierce Transit standards, individual architectural elements may be modified to meet the unique needs of the community (see Appendix 3).

Ongoing maintenance and repair of privately owned or business district shelters is an important consideration. If a non-standard shelter design is used, Pierce Transit will give additional consideration to the purchase, storage, handling and replacement of custom parts. It may be desirable to enter into a separate contract with the developer for maintenance of non-standard shelters. Typically, Pierce Transit will empty trash and conduct routine cleaning as long as the design meets Pierce Transit's criteria.

Shelters - continued

STANDARD SHELTER PACKAGE
Typically includes a shelter, pole mounted trash can, a midi-ride guide holder, a bus stop pole and sign, and a bench. The size of shelter installed will depend on the number of passengers boarding at a bus stop, the available space, and the potential impact on the surrounding environment. In a short-term waiting situation an allowance of five square feet per person is acceptable.[1]

There are five basic shelter types:

FULL
Approximately 9′ X 5′ of covered space without a bench, or a maximum standing capacity of seven passengers. When the area required to maneuver a standard sized wheelchair in and out of the shelter is deducted from the total covered area the remaining space is enough for four additional people. With a bench (seating capacity of two) and wheelchair, the standing capacity is reduced to two. After 2005, full shelters will be phased out.

CANTILEVERED
Approximately 9′ X 3′ of covered space without a bench, or a maximum standing capacity of four passengers. When the area required to maneuver a standard sized wheelchair in and out of the shelter is deducted from the total covered area the remaining space is enough for two additional people. With a bench (seating capacity of two) and a wheelchair, the standing capacity is reduced to zero.

[1] Highway Capacity Manual, 2000

Shelters - continued

ADVERTISING
Vary in length, typically from 9′ to 15′ long with an illuminated advertising canister (ad can) at one end. Approximately 15′ X 5′ of covered space without a bench, or a maximum standing capacity of eight passengers. When the area required to maneuver a standard sized wheelchair in and out of the shelter is deducted from the total covered area the remaining space is enough for five additional people. With a bench (seating capacity of two) and wheelchair, the standing capacity is reduced to three.

Shelters - continued

Proctor

Oakland Madrona

BUSINESS DISTRICT

- Downtown
- Fern Hill
- International
- McKinley Ave.
- Oakland Madrona
- Old Town
- Portland Ave.
- Proctor
- Stadium
- South Tacoma
- Upper Tacoma
- 6th Ave.

Shelters - continued

Pacific Ave.

Commerce Street

NON-STANDARD
Occasionally, a non-standard shelter will be utilized. Capacity varies by design. These are typically at Commerce Street, Transit Centers or other unique bus stops.

Shelters - continued

SEATING
In most cases, the shelter bench will be a simple 4' wide backless bench. When the shelter is open to the street, the bench is shifted to the right side of the open side of the shelter. Since Operators tend to stop at the head of the bus zone, this provides adequate space for wheelchair users on the left side. When the shelter is closed to the street, the bench location can be shifted to either direction.

SHELTER SITE CONFIGURATION
Pierce Transit evaluates the specific site using criteria such as prevailing winds, passenger and driver visibility, passenger access into and out of the shelter, passenger convenience and safety and pedestrian/traffic safety.

Shelter and Sign Placement Guidelines

1. The installed shelter should not create visual obstructions for vehicular traffic. Reasonable sight distances from adjacent intersecting streets and driveways should be maintained.

2. A waiting passenger should have an unobstructed view of oncoming traffic and the transit operator should easily see waiting passengers. The waiting passenger should also be able to see and be seen by people in the immediate vicinity.

3. Maintain a 2' minimum (3' is preferred) perpendicular setback between the curb face and the leading edge of the shelter roof, bus stop pole and flag or any street furniture.

4. Maintain a 4' minimum (5' is preferred) clear pedestrian pathway, either in front or behind the shelter, and from the buildings, trees and other street furniture, a 15' clearance from fire hydrants, and 10' from a utility pole.

5. When open to the street, the shelter is set back a minimum of 5' from the curb to give maximum protection from splashing and allow a wheelchair passenger access to the shelter. When possible, the shelter should be placed with the open side facing away from the road or prevailing winds for maximum protection.

6. The shelter should be placed within 10' to 15' of the head of the bus zone to minimize the walking distance from the shelter to the bus boarding area.

7. Other significant considerations include the impacts on adjacent properties and transit patron convenience.

8. Pierce Transit tries to avoid placing shelters where they will require retaining walls or other special structures; however, site-specific characteristics may necessitate consideration of these options.

9. A minimum vertical clearance of 7' is maintained between the bottom of the roof or sign and the surface of the shelter pad or sidewalk. This height is the minimum allowed by ADA.

Shelters - continued

Shelter Amenities Guidelines

1. No amenities are placed inside the shelter except seating and leaning rails.

2. Trash receptacles are mounted to the bus stop pole whenever possible. If no pole exists, it may be mounted to one of the two outer structural legs of the shelter.

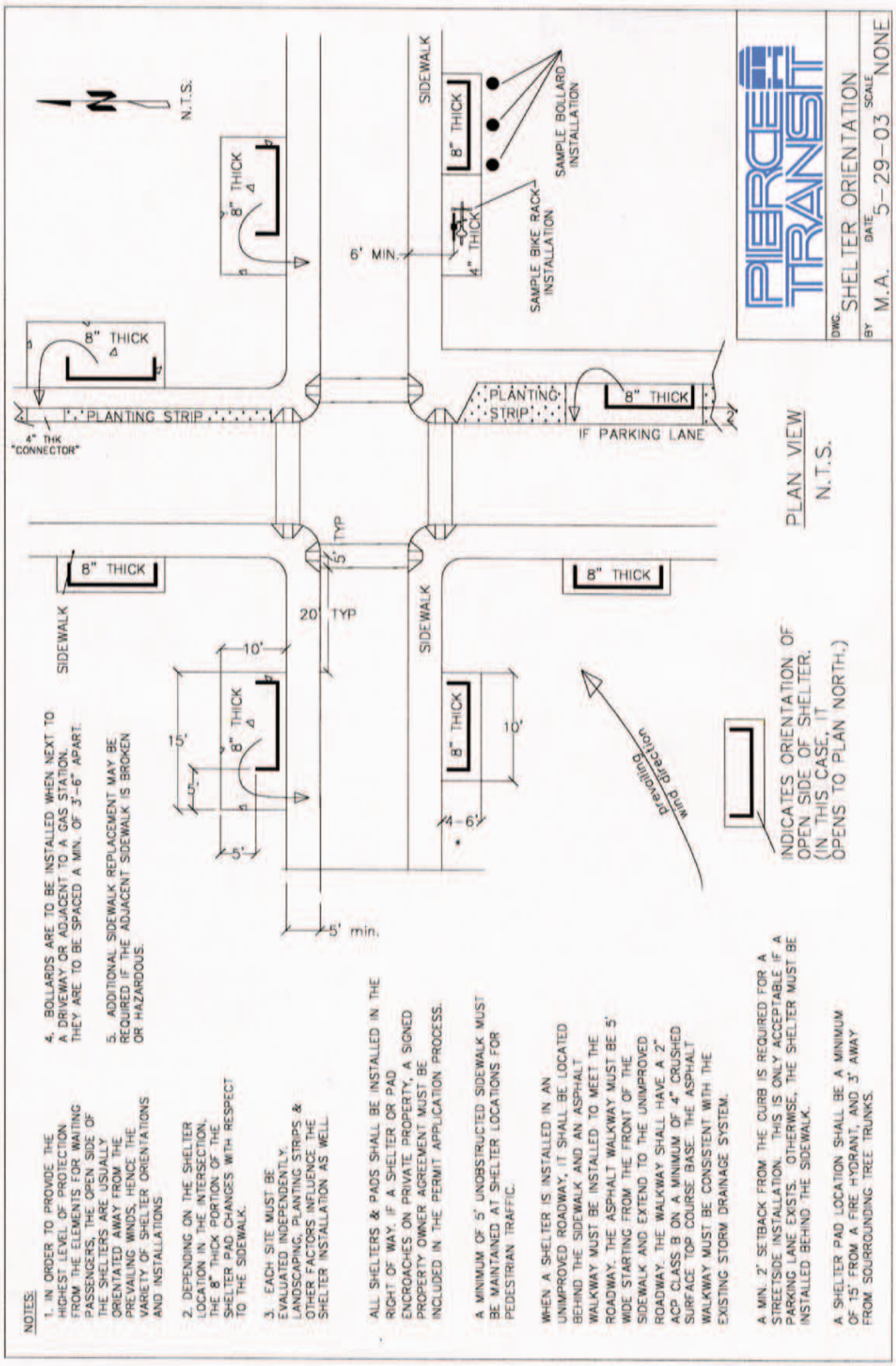
SHELTER APPEARANCE STANDARDS

Involvement of local community organizations in shelter design, placement, and/or funding can create a sense of local ownership which holds the potential for reducing vandalism. Some communities have involved students in projects to aesthetically improve shelters that serve schools and thereby gain the riders' investment in transit facilities. Refer also to the Art Shelter policy, detailed in Appendix 3.

SHELTER SIGNAGE APPROVAL

Pierce Transit discourages any signage inside its shelters. All unauthorized signs must be removed immediately. The agency may install enforcement or policy signage as needed.

Shelter Orientation



Sign & Pole Installation

A typical bus stop pole is a square walled aluminum pipe, 1-3/4" inside dimension, 2" outside dimension, 11' tall. Bus stop signs come in several sizes, determined by the number of routes served at a particular stop or the specific facility at which the sign is being installed.

SIGN/FLAG DESIGN AND CONTENT

The Pierce Transit Styles Manual contains the layout and dimensions of a Pierce Transit bus stop sign. The sign layout is based on an ideal ADA standard, but it is not always possible to meet the ideal. All permanently mounted signs should include the route number(s) served, the destination (when space permits), a wheelchair symbol decal, a no parking symbol and Pierce Transit's customer service phone number. Typically, all information except the route number is pre-printed on the sign. Marketing, Parts, and the BSP coordinate when new signs are needed. In the case of a new route, or where many sign changes are required which will reflect the same information, the entire sign may be pre-printed. Otherwise, Facilities Maintenance creates the text and numbers for the signs.

SIGN AND POLE INSTALLATION OPTIONS

There are 5 installation options: plated, in-ground, shared, combined and extended pole. Specifications for each are on the following pages.

NOTE

Non-concrete surfaces such as asphalt or brick are not suitable surfaces for any plated sign installation, as they do not provide the required anchoring characteristics or wind lift resistance.

Sign & Pole Installation - continued

PLATED
When concrete sidewalk is present at the bus stop and where at least 5′ of clearance exists after the pole is installed, a plated pole may be mounted onto the sidewalk. It should be a minimum of 2′ from the curb, 3′ is preferable.

IN-GROUND
In areas without sidewalks, or where sidewalks are less than 5′ wide, the pole should be installed at the head of the bus zone or bus stop no closer than 10′ (preferably 12′) from the edge of the road, with the sign facing towards oncoming traffic, mounted on the street side of the pole. If a bus is stopping on the roadway, the post can be a minimum of 2′ from the edge of the road, 3′ is preferred, with the sign mounted away from the street or 1′ behind the sidewalk with the sign facing toward oncoming traffic. Poles are installed in a 6″ diameter, 20″ deep hole and then filled with concrete. This installation should result in the drilled 1/2″ diameter hole at ground level, for maximum breakaway effectiveness.

SHARED
Ideally, the bus stop sign will be mounted on its own pole. However, in overlapping service areas, it is common to mount two or more Agencies' signs on a single pole. Sharing a pole with regulatory or traffic signs should be avoided whenever possible. But it is desirable to install on a light standard. These are metallic or other non-wooden styles, where a worker would not climb the pole itself to perform her or his duties. If there are too many signs on the light standard, creating clutter or poor distinction between signs, relocation of the sign to a dedicated bus stop pole is recommended. Never mount a bus stop sign to a wooden utility pole.

Sign & Pole Installation - continued

COMBINED
When no other option exists, and when consistent with safety and jurisdictional guidelines, bus stops may be combined with other regulatory signage. As a last resort, a bus stop sign may be combined with a stop sign or railroad crossing. This situation is not preferred as impatient auto drivers may pass on the left and not see the traffic signs.

EXTENDED POLE
There are instances when a pole is simply not long enough. A pole extension may be used.

Sign & Pole Installation - continued

POLE & SIGN PLACEMENT

The sign/pole locations are based on minimum clearances, best visibility and site-specific characteristics. In addition to stop spacing, the location of important buildings and other major destinations and the configuration of side streets leading into the bus route should be considered in the placement of stops. Stops on opposite sides of a two-way street (a pair of stops) should be located as close to each other as is practical and safe. Signs are no longer mounted directly to the roof of the shelter. It is more difficult to install signs there and it offers less flexibility in the placement of the sign.

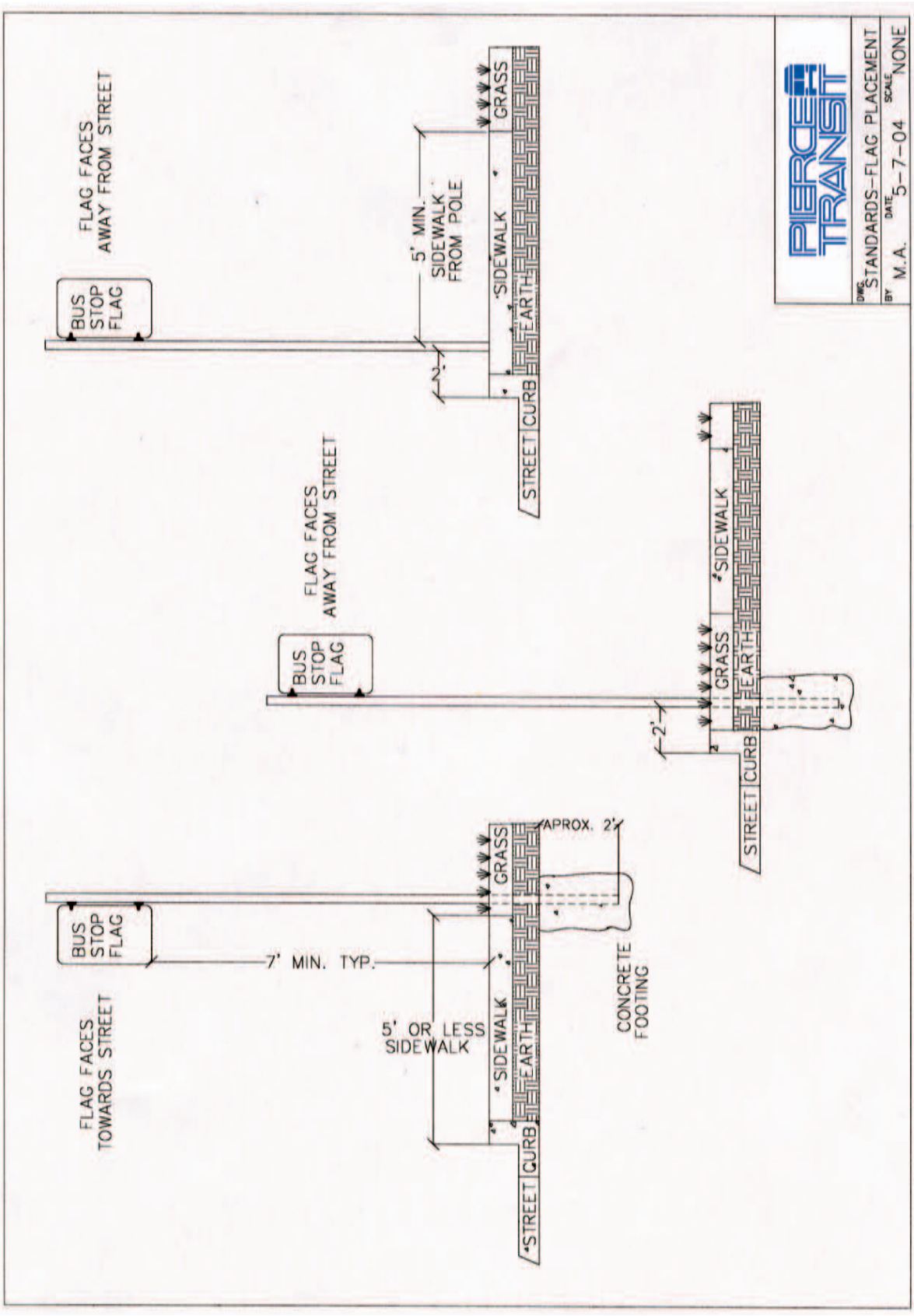
Trees & Limbs

Placing a pole near trees should be avoided. If such an installation is required, tree limbs should be trimmed in the vicinity of the stop to a minimum vertical clearance of 12′ to ensure adequate visibility. This decreases the chance of tree damage to the bus and/or mirrors as well as damage to the tree itself. The Facilities Maintenance crews generally clear branches up to 2″ in diameter, within the right-of-way. For larger jobs, contact the local jurisdiction first. They will either clear the area themselves or contact the property owner directly.

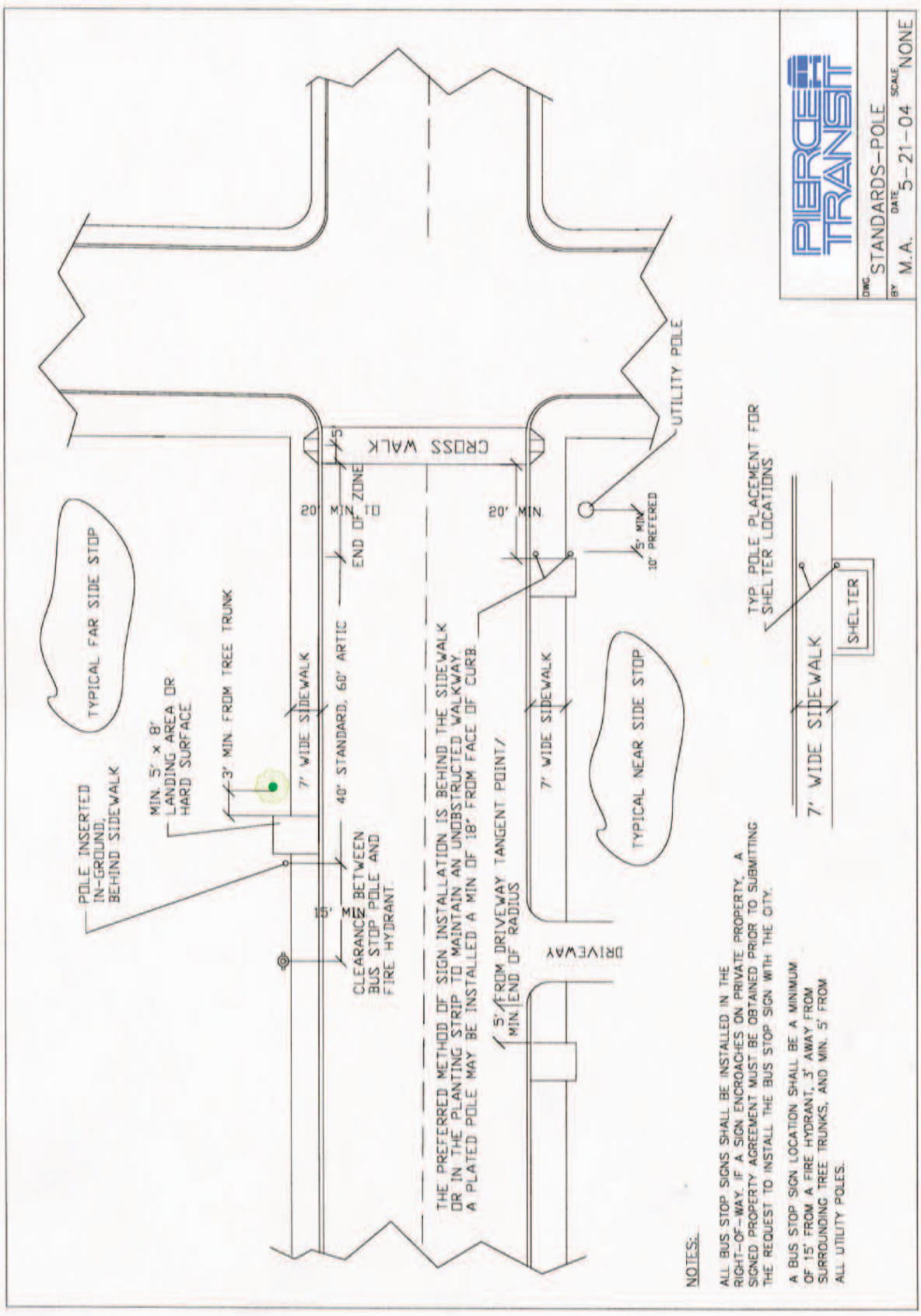
Additional Pole Markings

In cases where the pole and sign are difficult to see, it may be appropriate to mark the pole with reflective yellow tape. Clean and dry the pole at a height of 2′ from the ground and wrap the tape around the pole one time, overlapping at least 1″. The 2′ height is the approximate height of the bus' headlights and the optimum height for maximum reflectivity.

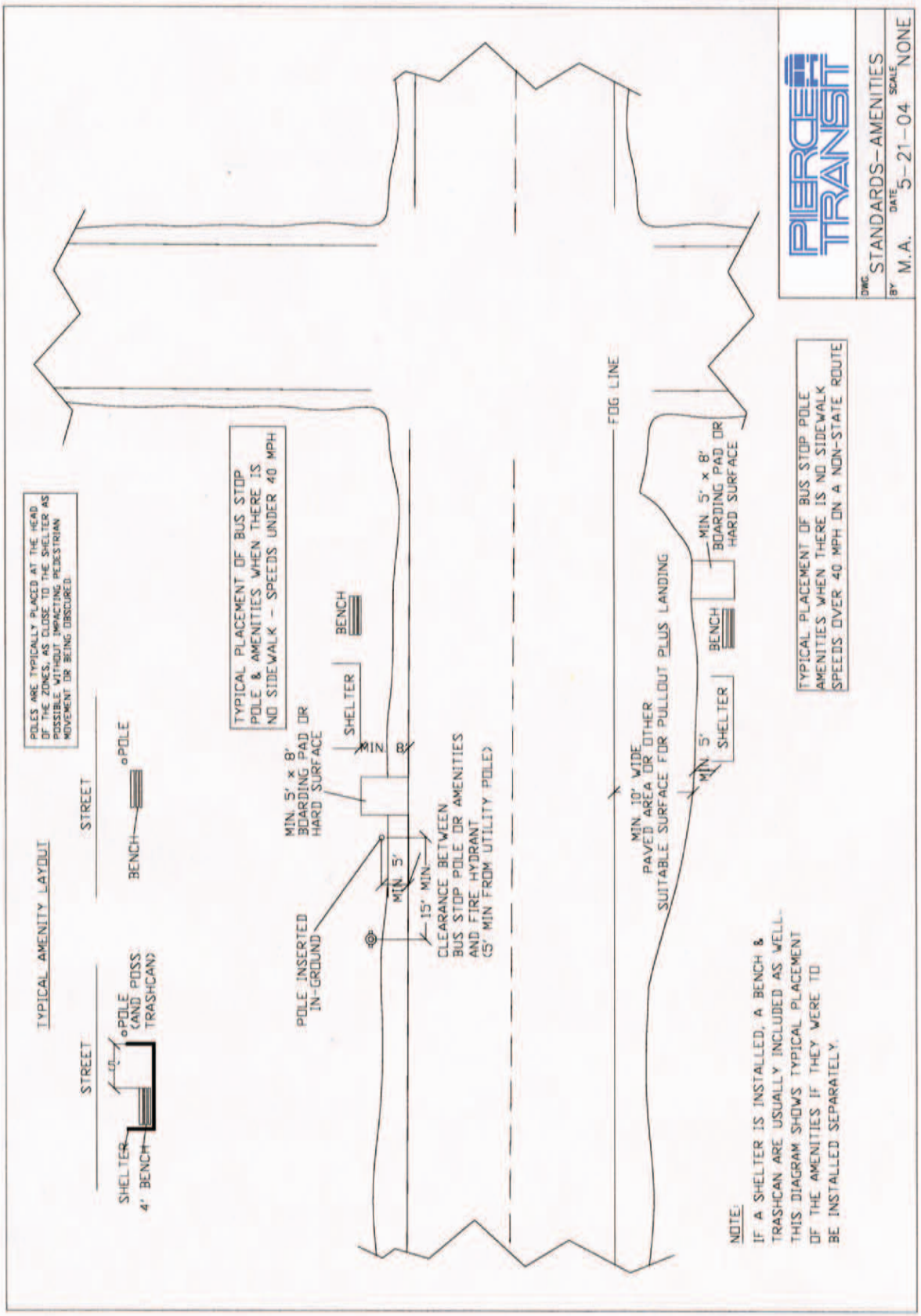
Flag Placement



Pole Placement



Amenities


PIERCE TRANSIT
STANDARDS-AMENITIES
M.A.
5-21-04
NONE
TYPICAL AMENITY LAYOUT
STREET
STREET
POLE
BENCH
SHELTER
4' BENCH
POLE (AND POSS. TRASHCAN)
POLES ARE TYPICALLY PLACED AT THE HEAD OF THE ZONES, AS CLOSE TO THE SHELTER AS POSSIBLE WITHOUT IMPACTING PEDESTRIAN MOVEMENT OR BEING OBSCURED
TYPICAL PLACEMENT OF BUS STOP POLE & AMENITIES WHEN THERE IS NO SIDEWALK - SPEEDS UNDER 40 MPH
MIN. 5' x 8' BOARDING PAD OR HARD SURFACE
SHELTER
BENCH
MIN. 8'
POLE INSERTED IN-GROUND
MIN 5'
15' MIN.
CLEARANCE BETWEEN BUS STOP POLE OR AMENITIES AND FIRE HYDRANT (5' MIN FROM UTILITY POLE)
EDG LINE
MIN. 10' WIDE PAVED AREA OR OTHER SUITABLE SURFACE FOR PULLOUT PLUS LANDING
MIN. 5' x 8' BOARDING PAD OR HARD SURFACE
BENCH
MIN. 5'
SHELTER
TYPICAL PLACEMENT OF BUS STOP POLE AMENITIES WHEN THERE IS NO SIDEWALK SPEEDS OVER 40 MPH ON A NON-STATE ROUTE
NOTE:
IF A SHELTER IS INSTALLED, A BENCH & TRASHCAN ARE USUALLY INCLUDED AS WELL. THIS DIAGRAM SHOWS TYPICAL PLACEMENT OF THE AMENITIES IF THEY WERE TO BE INSTALLED SEPARATELY.

Amenities

Always determine if the proposed amenity is within a defined business district or other restricted area. Typically, the districts have chosen non-standard styles, color schemes and/or artwork for their benches, shelters or trash cans. The business district likely has a monetary agreement in place with Pierce Transit (Sect. 1).

LEANING RAILS
Used in areas where passenger volumes are heavy but either no space is available for benches or wait time is minimal. They can also be used where sleeping on benches has been a problem.

BIKE RACKS
Typically located near bike lockers to allow one-time or short-term cyclists a secure means of locking their bikes at key bus stops where transfers are common and at major destinations like shopping malls.

BIKE LOCKERS
These covered, secured storage facilities are installed at most of Pierce Transit's Park & Rides and Transit Centers. For a monthly fee and key deposit, users are issued a key to a designated locker. Pierce Transit has chosen a modular design that allows us to easily increase or decrease capacity at facilities as needed.

Amenities - continued

BLINKY LIGHTS
Passenger activated lights mounted at the top of a bus stop pole. As the bus approaches, the passenger pushes the button to signal the driver. The flashing light greatly decreases the chance of a pass-by and increases the Operators' stopping distance. These devices are especially useful in poorly lit areas, high-speed corridors or where other factors have contributed to pass-bys.

SOLAR LIGHTING
An economical and environmentally friendly alternative to traditional lighting. A solar lighting system requires no trenching for conduit, no permits, inspections or monthly electric bills. A general rule of thumb is to provide 2-foot candles of light in the area of the bus stop or shelter. This is sufficient to read a page of text.*

TRADITIONAL LIGHTING
This is accomplished via electrical hookup or by simply placing the bus stop near existing light sources (streetlight or pedestrian lights) to provide adequate illumination. A general rule of thumb is to provide 2-foot candles of light in the area of the bus stop or shelter. This is sufficient to read a page of text.*

* Indiana Council on Outdoor Lighting Education (ICOLE), May 18, 2003 and I.E.S. Lighting Handbook

Amenities - continued

Business District

Custom

Flare Top

TRASH RECEPTACLES

Trash receptacles are often desirable as a convenience to customers as well as to maintain a clean environment at Pierce Transit's facilities where litter might be a problem. Installation of trash receptacles at bus stops without shelter is made on an as-needed basis by Pierce Transit's Facilities Maintenance and Bus Stop Program staff. Requests for trash cans should be routed through the Bus Stop Program, but are generated from various sources. Pierce Transit uses a 10-gallon, drop bottom, pole mounted trash can at the majority of stops. In some cases, two cans are butterflied on the same pole. At extremely busy stops, a 32-gallon, ground mounted side access style is used.

Facilities Maintenance staff install, maintain and empty all trash receptacles for bus stops. The Facilities Manager determines the interval for emptying trash cans. The Facilities Manager also determines if more frequent cleaning, additional trash cans or larger cans are needed. In some business districts, particularly in Tacoma, the district or the City have installed a non-standard trash can. Pierce Transit rarely maintains these trash cans.

Trash cans should be installed to create the least amount of impact on pedestrian and boarding activity. Pole mounted cans should be installed parallel to the curb and not hang into the sidewalk.

Amenities - continued

Pole mounted

Ranger

Rubbermaid

Non-Pierce Transit Amenities

Preferred

Endured

VENDING MACHINES

These are not authorized by Pierce Transit. Since we operate mostly in the public right-of-way, conflicts with private vending companies are minimal. However, if a vending machine is close to a transit stop and safety or cleanliness become an issue, the Bus Stop Program staff will contact the specific vendor to seek assistance in relocating.

NEWSPAPER/ADVERTISING DISPENSERS

These are not authorized by Pierce Transit at any of our facilities. However, since we share the public right-of-way in most cases, advertising and newspaper companies have the right to occupy the same space. If safety or cleanliness becomes an issue, the Bus Stop Program staff will contact the specific vendor to seek assistance in relocation or the installation of a "condo," a dispenser which houses more than a single publication. If a newspaper company wants to place a box at a Pierce Transit facility, they must obtain an application from the receptionist, which is then reviewed by Risk Management.

Non-Pierce Transit Amenities - continued

PAY PHONES
Installed through coordination between Pierce Transit and the local telephone company at most of our Park & Rides and Transit Centers. At other locations, the adjacent business or the local jurisdiction has provided them. Transit shelters should not be used for mounting pay phones.

CART CORRALS
These provide a dedicated area for the safe storage of shopping carts and may be desirable at bus stops located near shopping areas.

Spacing & Frequency

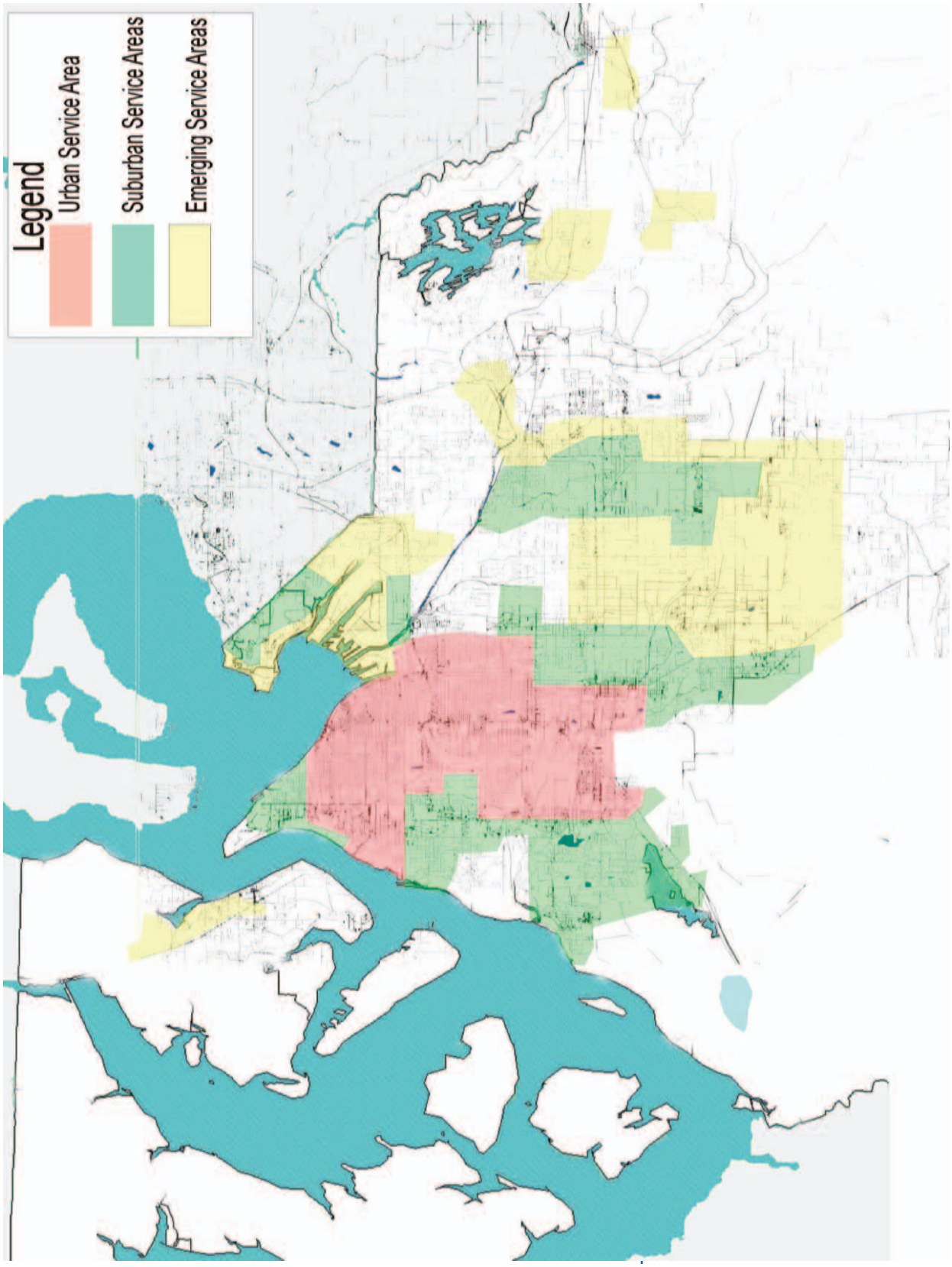
Population density helps determine the number of bus stops required to serve a particular area. A balance must be maintained between stop spacing and frequency; the more stops on a particular route, the longer the trip. Conversely, the fewer number of stops, the shorter the trip. The following guidelines should be used to help determine the approximate spacing of bus stops in areas of various densities. Spacing may range from one stop per block where city blocks are 500 or more feet in length to stops staggered in every second or third block where city blocks are shorter or when ridership does not warrant more frequent stops. Typically, no two stops should be within 500 feet of another.

Setting	Spacing Range (in feet)	Typical (in feet)
Business District	300-1000	600
Urban Area	500-1200	750
Suburban Area	600-2500	1000
Rural Area	650-2640	1250

(Table values from WSDOT Vehicle Stop Zone Guidelines and reflected in the strategic Business Plan)

[1] Highway Capacity Manual, 2000.

Boundary Map



Placement in Relation to Intersections

FAR-SIDE STOPS/ZONES

A far-side stop/zone is immediately following an intersection. Far-side stops/zones are the preferred location of Pierce Transit bus stops and are specifically recommended when:

a. The intersection is controlled by signals, stop signs or yield signs.
b. Traffic is heavier on the near side than on the far side of the intersection.
c. A large number of left or right turns occur.
d. Heavy traffic movements might cause delays in bus schedule.
e. Pedestrian access and existing landing area are better on the far side than the near side.

Advantages

- Transit Signal Priority (TSP) equipment is more effective at far side stops.
- Right turns by vehicles can be made with less conflict with stopped buses (except those turning from the cross street.)
- Left-turning buses approaching a far-side stop (after the turn is made) begin their left turn from the proper lane. Otherwise, if the bus is serving a near-side stop, and then has to immediately make a left turn, it is forced to either cross multiple lanes in a short distance, or make a left turn from the right curb/parking lane.
- Buses stopped in a zone do not obstruct sight distance to the left for vehicles entering or crossing from a side street.
- At a signalized intersection, buses can find a gap to enter the traffic stream without interference.
- Buses in the bus stop will not obscure traffic control devices or pedestrian movements at the intersection.
- Minimizes sight distance problems on approach to the intersection.
- Less curb space is needed for the bus zone since the intersection length can be used to decelerate and align the bus to the curb. This means less lost parking.

Disadvantages

- Intersections may be blocked if vehicles park illegally in the bus stop, thereby obstructing other vehicles and causing traffic to back up across the intersection.
- A bus standing at a far-side stop obscures sight distance to the right of a vehicle entering from a side street or driveway. This is particularly dangerous if the other vehicle is attempting to turn left and is unable to see around the bus.
- May increase sight distance problems for crossing pedestrians.
- The bus may have to stop far side after just stopping at a red light, interfering with general traffic.
- May increase the number of rear-end accidents since drivers don't expect the bus to stop after a red light.
- See App. A2

Placement in Relation to Intersections - continued

NEAR-SIDE STOPS/ZONES
A near-side stop zone is one that is located immediately before an intersection. Near-side stops are less desirable and should be used when:

a. There are no far-side options.
b. The intersection is controlled by signals, stop signs or yield signs, when transit operations are more critical than traffic or parking.
c. Traffic is heavier on the far-side than on the nearside of the intersection.
d. Pedestrian access and existing boarding area are better on the near-side than the far-side.

Advantages

- There is less interference with traffic turning onto the bus route street from a side street.
- Passengers generally depart from the bus close to an intersection that might include a crosswalk or other traffic controls.
- Eliminates the potential for double stopping.
- Allows for boarding and alighting while the bus is already stopped for a red light.
- The bus has maximum options after serving the stop: right turn, left turn (from a single lane of traffic) or straight.

Disadvantages

- Transit Signal Priority (TSP) equipment is less effective at near-side stops.
- Auto drivers may attempt to make a right turn in front of a bus stopped at a near-side stop.
- A bus standing at a near-side stop may obscure the sight distance of a driver entering the street from the right as well as pedestrians crossing the street.
- A bus standing at a near-side stop may block a stop sign on the right corner, or interfere with right turn lanes.
- More curb space is usually needed, which results in additional lost parking.
- If the bus is serving a near-side stop and then has to immediately make a left turn, it is forced to either cross multiple lanes in a short distance, or make a left turn from the right curb/parking lane.
- Oncoming traffic may make a left turn in front of the bus, assuming it's going to remain stopped.
- See App. A2

Placement in Relation to Intersections - continued

MID-BLOCK STOPS/ZONES

A mid-block stop/zone is located 300' or more beyond or before an intersection. A mid-block stop should be located at the far side of a mid-block pedestrian crosswalk, if one exists, so standing buses will not block a motorist's view of pedestrians in the stops/zones. They are recommended when:

a. Traffic or physical street/sidewalk characteristics prohibit a near or far-side stop adjacent to an intersection.
b. There is a specific demand at a mid-block location such as large factories, commercial establishments, or development.
c. There are long distances between cross streets.

Advantages

- Buses at mid-block stops cause a minimum of interference with the sight distance of both vehicles and pedestrians.
- Stops can be located adjacent to major activity centers.
- May result in passenger waiting areas experiencing less pedestrian congestion.

Disadvantages

- The removal of considerable curb parking is required in areas where on street parking would otherwise be permitted.
- Pedestrian jaywalking is more prevalent if the mid-block stop is not located where there is a mid-block crosswalk. This is hazardous for the pedestrian, conflicts with vehicles and creates congestion.
- Patrons from cross streets must walk farther to catch the bus.
- See App. A2

Placement in Relation to Crosswalks

DISTANCE FROM STOP ZONE TO CROSSWALK PRIOR TO A CONTROLLED INTERSECTION – NO TSP

1. 20′ when the bus stops in driving lane with an overhead traffic signal.
2. 30′ when there is a stop sign and flashing overhead stop beacon.
3. 50′ when there is only a stop sign.

DISTANCE FROM STOP ZONE TO CROSSWALK PRIOR TO A CONTROLLED INTERSECTION – WITH TSP

Stops should be a minimum of 100′ prior, 200′ preferred prior to an intersection with Opticon equipment.

STOPS NEAR CROSSWALKS

The bus should not block any part of a crosswalk, marked or unmarked, while it is serving a stop. Typically, the bus stop sign should be no closer than the length of the bus plus 20′ beyond the crosswalk (ex. 60′ for a 40′ bus) or 20′ prior to it.

STOPS AT DRIVEWAYS

Efforts shall be made to locate bus stops at least 20′ away* from driveways. However, if it is determined that a driveway is the only accessible location in the desired stop area, a bus stop may be placed adjacent to the driveway. In such cases, the bus stop will be situated to provide proper sight lines and safety for customers and residents. If the driveway itself will be used for wheelchair boardings, the driveway must be kept clear during normal operations, or it is unsuitable for a bus stop. These are called "non-designated" boarding areas since there is no way to mark them.

STOPS NEAR RIGHT TURN ONLY ENTRIES

Whenever possible, a minimum of 20′ separation between the bus stop and the travel lane should be provided.*

• See App. A2

* Guidelines determined by Pierce Transit Safety and Training Staff.

Pedestrian Issues

PEDESTRIAN ISSUES TO BE CONSIDERED IN STOP PLACEMENT

1. The proximity to alternate shelter, adequate lighting and traffic control features.

2. Compare alternate locations which may provide better sidewalk access or other pedestrian friendly conditions.

3. Locate bus stops to minimize crosswalk movements of passengers transferring to other routes, or walking to major destinations.

4. Avoid "boxing in" a commercial establishment at a corner by having bus zones on both sides. However, if there is one predominant transfer movement at an intersection, the bus stop/zone should be located so that passenger walking will be minimized.

5. Do not place a bus stop where waiting passengers will have to stand in puddles or mud.

Accessibility Considerations

Pierce Transit defines an accessible bus stop as one at which the wheelchair lift can be deployed and a customer using a standard wheelchair can maneuver off or onto the lift to/from a safe boarding area. This minimum boarding area is allowed to be up to 40' either side of the pole and still be considered accessible. Careful consideration must be given to this situation. The "non-designated" bus zone must be clear under normal circumstances.

An accessible path to and from the stop is essential to a customer's ability to use the stop, and Pierce Transit will make every effort to locate stops where customers can safely access them. However, Pierce Transit does not typically construct or maintain pedestrian facilities, including sidewalks, curb cuts or crosswalks.